Revealing India's Past

by

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special interest which he has taken in the production; and to Mrs. Minorsky for her skilful assistance in the preparation of the Index.

In the spelling of names and places the style of the *Imperial Gazetteer of India* (1909) has been generally adopted as the standard, but with a sparing use of diacritical marks; and the *Atlas*, volume xxvi of the same, as revised in 1931, with no diacritics, has been followed in the case of modern place-names. The use of vernacular names has also been avoided as far as possible, the English equivalents being given in the text. A glossary of certain vernacular terms, the use of which is unavoidable, is to be found at the end of the volume. The use of footnotes has been avoided; but subsidiary notes, corresponding to references in the text, have been placed at the end of certain chapters. The authorities regarding specific subjects or places will be found in Chapter VI on Publications; and cross-references have been made in the Index.

The illustrations, necessarily limited in number, are intended to give some slight indication of the many monuments rescued from neglect, misuse, ruin or oblivion. In the words of the Viceroy, Lord Linlithgow, in an address to the Central Legislature on 23rd September, 1937, 'the monuments of antiquity, eloquent witnesses of the historical and cultural achievements of this great country, constitute a heritage of incalculable value and significance which it must be our privilege to guard and hand down to posterity.' The names of those who have given permission for reproduction have been recorded in the List of Illustrations; and to them grateful thanks are due.

The Editor has to announce with deep regret that the author of Chapter III (*a*) on Prehistoric Civilization, Mr. N. G. Majumdar, was killed in November last while on special exploration duty on the Sind frontier. His death is a grievous blow to Indian archæology.

FOREWORD

Feuilletez ce livre : vous serez aussitôt frappé de la richesse et de la sûreté des informations qu'il renferme. Que vous soyez spécialiste ou amateur, philologue ou historien, archéologue ou simple touriste, vous y trouverez aisément, grâce à la clarté lumineuse du plan et de l'exposé, le renseignement d'ordre théorique ou pratique, bibliographique ou topographique dont vous pouvez avoir besoin sur n'importe quel point des antiquités de l'Inde. Du même coup vous verrez se dérouler, comme sur une bande de cinéma, les aspects si variés des vieilles civilisations de l'immense péninsule : car comment le récit, si succinct qu'il soit, de la façon dont le passé a été exhumé de son linceul de décombres ne ferait-il pas lever à chaque pas son protéiforme fantôme devant les yeux du lecteur? Qu'ils appartiennent à l'Inde britannique ou aux états indigènes, voire même à l'Asie centrale, qu'ils datent des derniers siècles ou de la proto-histoire, qu'ils soient l'œuvre des hindous ou des musulmans, des bouddhistes ou des jaïnas, sites historiques et lieux de pèlerinage, sanctuaires et palais, images et inscriptions défilent à leur rang, sans omission ni confusion aucunes.

Dès l'abord on reste saisi d'étonnement devant un pareil tour de force, et l'on se demande comment il a été possible en 350 pages de rassembler autant de faits, grands et menus, et de les présenter avec une élégance aussi consommée. La surprise cesse du moment qu'on lit les noms, dont beaucoup sont depuis longtemps célèbres, des vingt-deux collaborateurs et du rédacteur en chef. On n'est jamais si bien raconté que par soi-même : or, c'est justement tous les membres encore en exercice ou déjà en retraite du Service

archéologique qui viennent tour à tour, dociles à l'appel d'un habile metteur en scène, faire en personne les honneurs de leurs monuments et de leurs fouilles, de leurs musées et de leurs publications. Aussi ce joli petit volume va-t-il devenir pour longtemps—en fait jusqu'à ce qu'une seconde édition remise à jour soit jugée nécessaire —l'indispensable *vade mecum* non seulement de tout indianiste et de tout Indien lettré, mais encore de tout visiteur occasionnel de l'Inde, pour peu qu'il ait le goût de l'histoire et le sens de l'art. Bientôt même l'on ne concevra plus qu'il ait été possible de s'en passer : et c'est dans cette faveur croissante du public que l'heureuse initiative prise par l'*India Society* trouvera sa juste récompense.

Il est une autre impression à laquelle le lecteur ne saurait davantage échapper. Comment ne pas être rempli de respect et d'admiration devant la somme considérable d'efforts courageux et désintéressés que les trois dernières générations ont dépensée à la mise en train de la gigantesque entreprise que représente l'exploration archéologique de tout un sous-continent? Climat, distances, difficultés d'accès, inexpérience de la main-d'œuvre, hostilités locales, préjugés de caste ou de religion, aucun des obstacles qui leur furent opposés, soit par la force d'inertie de la matière, soit par la mauvaise volonté des hommes, n'a pu détourner de leur tâche les premiers pionniers européens, ni davantage leurs successeurs, ni non plus les Indiens qu'ils n'ont pas tardé à associer à leur pieuse entreprise. Leur persévérant labeur n'a pas été vain; car à la réussite matérielle est venu s'ajouter un éclatant succès moral. Parmi les nombreux bienfaits que la stabilisation de l'administration britannique a procurés à sa grande Dominion asiatique, il n'est pas de don plus gracieux que d'avoir éveillé chez elle le souci de son glorieux héritage artistique et de lui en avoir enseigné la valeur : il n'en est pas non plus qu'elle apprécie plus sincèrement. Les peuples, on le sait, s'accoutument si vite à jouir de la justice, de la sécurité, des

facilités de transport et autres aménités de la vie qu'ils ne sentent plus le prix de ces biens primordiaux, sauf quand ils sont menacés de les perdre : et c'est là une menace contre laquelle la *pax britannica* a jusqu'ici garanti les masses indiennes. Mais chaque découverte nouvelle, en enrichissant le patrimoine et en chatouillant l'amour-propre national, ravive un intérêt qui va s'élargissant au lieu de s'affaiblir. Le monde est ainsi fait : ce n'est pas le pain quotidien, c'est l'occasionnelle friandise qui ravit l'homme comme l'enfant.

Ajouterons-nous que le moment est fort bien choisi pour présenter au public l'inventaire des magnifiques résultats d'ores et déjà obtenus? L'histoire de l'archéologie indienne se divise actuellement en deux périodes à peu près égales, mais bien distinctes : celle qui a précédé et celle qui a suivi la vice-royauté de Lord Curzon et le rétablissement définitif de l'Archæological Survey (1902). Avant, c'est, comme partout, "l'époque héroïque," féconde, certes, en révélations et en trouvailles d'un intérêt capital, mais discréditée par des improvisations spasmodiques, des fouilles incomplètes, des restaurations maladroites et des publications restées en suspens. Après, le temps est enfin venu des services bien organisés, des desseins longuement médités et menés à bon terme, des travaux de conservation judicieusement conduits, des fouilles reprises saison après saison, des rapports annuels s'alignant sur les rayons des bibliothèques et faisant de chaque découverte le bien commun des chercheurs du monde entier—et aussi (car toute médaille a son revers) des accumulations de dossiers et des tâches administratives écrasantes. Tout cela (est-il besoin de le dire?) ne s'est pas accompli seul : en Orient, moins encore qu'ailleurs, les choses ne se font pas sans les hommes, et l'œuvre ne vaut que ce que vaut l'ouvrier. Par bonne chance Lord Curzon avait su frapper à la bonne porte, et les Conservateurs du British Museum lui désignèrent un jeune archéologue qui venait de faire brillamment ses premières armes en Grèce

et en Crète. Par un hasard curieux et qui vaut d'être relevé, ce dernier portait un nom prédestiné : car John Marshall est le premier Anglais qui, entre 1668 et 1672, se prit d'intérêt pour les antiquités indiennes. Il sera difficile d'ôter de la tête de plus d'un de nos amis indiens que c'est lui qui est rené en des temps plus propices pour reprendre sur une grande échelle la tâche prématurément amorcée. En tout cas, de même que l'activité du général Alexandre Cunningham résume la première période du Service archéologique de l'Inde, la seconde est tout entière dominée par la personnalité de Sir John Marshall, deuxième du nom.

Ce qu'ont valu à l'Inde et à la science ces trente-six dernières années de travail et de succès, on en verra le résumé dans les pages qui vont suivre. La méthode adoptée a fait ses preuves : désormais Exploration et Conservation, loin de se contrarier en sœurs ennemies, ont marché la main dans la main, et transformé chaque site exploré comme chaque monument conservé en une halte de rêve pour le touriste, en un champ d'évocation pour l'historien. Pour ne citer que deux exemples entre vingt, c'est la baguette du même magicien qui a laissé sa marque aussi bien sur les abords du Tâdj-Mahal d'Agra que sur la sainte colline bouddhique de Sântchî. Le but poursuivi n'était d'ailleurs plus, comme jadis, de meubler de bas-reliefs ou de statues les musées des capitales de province, ni même (par une innovation des plus louables) les dépôts archéologiques locaux : il ne s'agissait à présent de rien moins que de ressusciter la civilisation des anciens Indiens, avec leurs villes, leurs rues, leurs logis, leur mobilier, leurs ustensiles d'argile ou de métal, leurs armes, leurs bijoux, leurs cachets, leurs monnaies. C'est dans cet esprit que nous ont été restituées les trois cités successives de Taxila, celle d'Alexandre, celle des Parthes et celle des Kushâns. Nous disons bien « restituées » : car la ruine même n'a pas péri; au lieu d'achever comme jadis de s'effriter sous la pioche des coolies

ou d'être abandonnée aux déprédations des villageois du voisinage, elle n'a été exhumée qu'afin de contracter un nouveau bail de vie. Le livre des fouilles a été gardé ouvert à la dernière page tournée pour que chacun puisse venir à son tour s'y pencher et y lire pour son propre compte les secrets du passé.

Toutefois ces recherches ne nous menaient pas plus haut que le IVe siècle avant notre ère, et les indianistes continuaient à faire piètre figure en face des assyriologues et des égyptologues qui, eux, jonglaient familièrement avec trois ou quatre millénaires de plus. Les sensationnelles découvertes du bassin de l'Indus nous ont enfin apporté le droit de traiter désormais d'égal à égal avec les gens de la Mésopotamie et de la vallée du Nil. De ce coup de théâtre le monde entier a retenti, et la gloire est venue, avec ses simplifications parfois outrancières. Plaisons-nous à espérer que les fouilles de Mohendjo-Daro et de Harappa ne feront pas oublier les autres exploits archéologiques de Sir John Marshall; mais il faut que d'avance il se résigne à rester pour la postérité l'homme qui, archéologiquement parlant, a laissé l'Inde de trois mille ans plus vieille qu'il ne l'avait reçue.

C'est donc bien une ère nouvelle qui s'ouvre devant un Service désormais tout entier confié à des fonctionnaires indiens. La méthode a été fixée et même codifiée, les grandes lignes du cadre tracées, et l'exemple donné de main de maître : ils sauront continuer à progresser dans la voie triomphalement ouverte devant eux. Leurs aînés ne se font d'ailleurs aucune illusion sur l'énormité de la tâche qu'ils leur ont léguée; et l'on ne peut qu'approuver la politique libérale du Gouvernement de l'Inde qui a décidé d'accepter dorénavant, pour les recherches archéologiques, l'aide des Universités et des corps savants étrangers aux mêmes conditions que le font l'Égypte et la Syrie : il reste de la besogne pour bien des lustres et pour tous les gens de bonne volonté. Peut-être y aurait-il avantage,

à présent que localement le plus fort est fait, à élargir systématiquement l'horizon de l'archéologie indienne. Le meilleur service qu'au bout de ses cent cinquante ans d'existence nous ait rendu l'Indologie a été de nous faire comprendre la place de l'Inde dans le monde antique et son rôle dans l'histoire générale de la civilisation. C'est un fait désormais établi que, si isolée qu'elle soit derrière le fossé de ses mers et le rempart de ses montagnes, la grande péninsule a été de tout temps ouverte du côté de l'Occident et qu'elle a de son côté étendu son influence sur tout l'Orient de l'Asie. Prédestinée par son climat à être une grande consommatrice d'hommes et d'énergie, c'est par l'Ouest qu'elle a successivement reçu et absorbé Mongols, Arabes, Scythes, Parthes, Grecs, Perses, tribus védiques et pré-védiques, pour ne parler que des anciens envahisseurs qui nous ont laissé des preuves écrites ou des traces matérielles de leur passage; et il semble même que ce soit sous la poussée occidentale qu'elle a débordé à son tour sur l'Indo-Chine et l'Insulinde. Aussi apparaît-il de plus en plus clairement que son Service archéologique a tout intérêt à travailler en liaison, non seulement avec ceux de Birmanie et de Ceylan, du Siam, de l'Indo-Chine française et des Indes néerlandaises, mais encore avec ceux de l'Afghanistan, de l'Iran et de l'Irâq, en attendant que la côte orientale de l'Afrique et Madagascar entrent à leur tour dans le jeu: car nous n'ignorons plus que la "Grande île" est une colonie indo-malaise, et il est permis de se demander si les ruines énigmatiques de la Rhodésie ne livreraient pas leur secret à un indianiste. L'Océan Pacifique a déjà, comme chacun sait, ses congrès scientifiques périodiques, ce dont toutes les nations riveraines s'applaudissent à l'envi: l'Océan Indien mériterait assurément d'avoir aussi les siens, et l'Inde, sa clef de voûte, est le centre tout indiqué pour qu'ils y tiennent leurs assises. Dans le sens de cette large coopération intellectuelle nous paraissent résider pour l'Indologie ses meilleures chances d'avenir.

A. FOUCHER.

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English Miles
0
100
200
300
400
84
88
92
96
100
32
28
24
20
16
12
8
T I B E T
Brahmaputra R.
NEPAL
Katmandu
Bhatgaon
Bahraich
Piprava
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Maghar
Ayodhya
Gorakhpur
Nandangarh
Kesariya
Fyzabad
Azamgarh
Basarh
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Jaunpur
Benares
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Patna
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Parsvanath
Deogarh
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Jalpes
Hajo
Tezpur
Kantanagar
Kamakhya
Gauhati
Sibsagar
Gaurisagar
Nigriting
Kasomari Pathar
Dimapur
Dinajpur
Bangarh
Panduah
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Badal
Mahasthan
Paharpur
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Sylhet
Unakoti
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Barakar
B E N G A L
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Bahulara
Pandua
Bishnupur
Satgaon
Bagerhat
Calcutta
Jator Deul
Tamluk
Ramgarh Hill
Kukarramath
Gaganesvar
Balasore
Orissa
Janjgir
Sirpur
Rajim
R. Mahanadi
Jajpur
Cuttack
Ratnagiri
Dhauli
Udayagiri
Bhuvaneswar
Konarak
Jaugada
Puri
Mahendragiri
Srikurmam
Salihundam
Calingapatam
Ramatirtham
Anakapalle
Sitakund
Chittagong
Mogaung
Wuntho
Bhamo
Tagaung
(Old Pagan)
Mong Maw
Hsenwi
Kalemyo
Mong Mit
Shwebo
Hsipaw
B U R M A
Mandalay
Sagaing
Amarapura
Ava
Powun-daung
Pakangyi
Kyaukse
Kyaunghwe
Pagan
Arimaddana
Mahamuni
Myohaung
(Mrauk-u)
Vesali
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Pithapuram
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Vegi
Bezwada
Gudivada
Masulipatam
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Madras
Lucknow
Allahabad
Chitrakut

great mass of information, systematized to some extent, according to the light then available. Each volume embodied the results of a single tour, published two or three years after the tour had been made. Like Dr. Burgess's works noticed below, though running in a different groove and on another plane of scholarship, General Cunningham's reports aimed at exhaustiveness, and thus in their time were believed to carry a certain final authority. In their entirety these twenty-three volumes bring together the results of the survey of the central and northern parts of India, at which General Cunningham and his assistants worked patiently for nearly a quarter of a century; and the reports ceased, when this particular survey ceased, on General Cunningham's retirement. Western and Southern India, and of course Burma, were left quite outside the programme, and even as regards Northern India it is no disparagement of General Cunningham to say that his pioneer work had in reality only touched the fringe of his subject.

The repair of ancient monuments, it is to be observed, formed no part of General Cunningham's responsibilities. These duties were assumed to be sufficiently discharged by the Local Governments, on whom they had been impressed by many successive orders. It was not until 1878 that some qualms began to be felt by the Viceroy, Lord Lytton, about this arrangement; and the then Viceroy wrote: 'The preservation of the national antiquities and works of art ought not to be exclusively left to the charge of Local Governments, which may not always be alive to the importance of such a duty. Lieut.-Governors who combine æsthetic culture with administrative energy are not likely to be very common, and I cannot conceive any claims upon the administrative initiative and financial resources of the Supreme Government more essentially imperial than this.' As a fact, these words were penned with the definite knowledge that many of the greatest monuments of ancient

India were steadily sinking into a deplorable condition. The out-come of Lord Lytton's ideas was the creation, for a term of three years, of the post of 'Curator of Ancient Monuments,' who was to prepare a classified list of the monuments of each Province, showing whether they were worthy 'to be kept in permanent good repair, or were decayed beyond that point but not in complete ruin, or were unimportant or irretrievably ruined.' The Government of India were then to arrange with each Local Government as to the amount of an imperial grant-in-aid to be made to each Province.

The officer appointed to fill this new post was Major H. H. Cole, R.E., who between 1881-1884 produced three Reports formulating a valuable, though naturally very incomplete, programme of conservation work for the future. Major Cole was also responsible for twenty-two preliminary Reports on particular groups of monuments in the Bombay and Madras Presidencies, Rajputana, Hyderabad and the Punjab (including the North-West Frontier), and for ten folio volumes which appeared under the title *Preservation of National Monuments in India* (Calcutta, 1881-85), with some exceptionally fine illustrations and brief explanatory notes, of the most famous buildings and antiquities in his charge. At the same time he personally superintended the repair of a number of these buildings.

At the end of the three years Major Cole's appointment was, most unfortunately, terminated, and up to 1902 his Reports remained the sole works of permanent value relating to conservation, as distinct from research, among the whole bibliography representing forty years of archæological activity in India. On the Curatorship ceasing to exist, the work of conservation relapsed, as before, into the hands of the Local Governments; but the energies of the Curator had not been expended wholly in vain, since, apart from the actual repairs which he carried out, they may be said to have laid the

foundation, in theory at least, of an organized scheme of permanent conservation. To what extent this foundation has since been built upon, we shall see later.

When General Cunningham retired in 1885, Dr. Burgess, who till then, by his labours as Archæological Surveyor for Madras and Bombay Presidencies, had provided the complement of General Cunningham's work in Northern India, was promoted to be head of the entire Department. At the same time the functions of conservation were amalgamated with those of survey and research, and five Survey areas, with a Surveyor assigned to each, were mapped out, *viz.:* Madras, Bombay, the Punjab (with Sind and Rajputana), the North-West (now United) Provinces (with Central India and the Central Provinces), and Bengal (with Assam). As a matter of fact, only three Surveyors were appointed—for the Punjab, the North-West Provinces and Bengal, Dr. Burgess being still expected to superintend, with the help of two assistant Surveyors, the operations in the Madras and Bombay Presidencies, in addition to his new imperial duties.

Even then, however, there was no intention of making the reorganized Department a permanent institution. An archæological survey was still regarded as something which once done was done for ever; and in view of the extent of ground covered by General Cunningham's twenty-three years of touring, it was hopefully thought that in about five years more the new Director-General would be able to complete the whole task, disband the Survey, and safely hand over the supposedly simple duties of conservation to the Local Governments. Indeed, when, shortly after Dr. Burgess's promotion, the progress of archæological work in the Bombay and Madras Presidencies came under review, it was decided, 'in order to bring it to a termination within a reasonable time,' to engage the services of an additional officer, Dr. E. Hultzsch, as Epigraphist for

the translation of inscriptions in the Sanskrit, Pali and Dravidian languages.

Of the quality of Dr. Burgess's Reports it would not be easy to speak in overstrained praise. But Dr. Burgess made no pretence of conducting a comprehensive and connected survey of the Indian continent by a system of simultaneous progress in its various parts; nor did it occur to him to publish periodical reports of his own discoveries at the time they were made. A specialist in his tastes, Dr. Burgess concentrated his abilities on special classes of monuments or on special tracts of country whose peculiar interest attracted him. *The Buddhist Caves of Western India* (NIS, IV) and *The Antiquities of the Bidar and Aurangabad Districts* (NIS, III) exemplify this trait. More than that, the publication of each report was usually delayed until enough material had been accumulated and studied for a complete monograph to be produced, that should be fit to stand for many years as the standard work on the subject. During the twenty-nine years from 1874 to 1902, as many as thirty-two miscellaneous volumes of the *New Imperial Series* saw the light, of which thirteen were from the pen of Dr. Burgess himself, and nineteen from the pens of nine coadjutors; but there were large areas of India and further India which were still quite untouched by the archæologist.

In 1889, after four years in his new post, Dr. Burgess decided to retire. He had then rendered brilliant archæological service in various capacities for fifteen years, and after his retirement added many more years of valuable editorial work to his record. Then followed something like disruption in the Department. An era of retrenchment in the Government of India had just begun. The post of Director-General was allowed to remain vacant; virtually, it was abolished. Provincial Surveyors were retained in Madras and Bombay, and the United Provinces continued to employ Dr. Führer;

but Bengal, the Punjab, Burma and the Indian States were left without Superintendents. Even this attenuated establishment was sanctioned only till 1895.

With the year 1890, then, the low-water mark in the chequered history of the Indian Archæological Department was reached, and for the next five years the situation remained uneventfully at that depressed level. The outlook at that time was anything but hopeful. Half of India was shorn of its archæological staff altogether, and in the other half conservation was abandoned to the Local Governments, with no central authority to ascertain how the responsibility was being discharged; and, although much was undoubtedly done at this time by some of the Local Governments to preserve the most important of their ancient buildings, no connected account exists of what they did, and it is certain that the Lists of Monuments requiring official safeguarding and preservation were everywhere incomplete. The annual reports of the Superintendents in Madras, Bombay and the United Provinces were confined to brief narratives of archæological tours and descriptions of monuments visited and surveyed. And here let it be mentioned that besides the ancient monuments in the possession of the various Local Governments, there were two other important classes of historical relics, *viz.*: those held by trusts or societies and those held by private individuals. No reference to these, however, is contained in the annual provincial reports. It is known that in the United Provinces, and especially in Lucknow, much was being done at this time by the Local Governments to secure the proper application of endowments for the upkeep of such monuments, and to supplement the endowments by grants-in-aid; but this knowledge is not obtainable from the records of the Archæological Department.

In 1895 the future of the Archæological Department was reconsidered by the Government of India. They came to the conclusion

that it was neither possible to disband the Survey altogether nor advisable to maintain it on its then reduced and ineffective scale, but this decision was coupled with an emphatic declaration that its operations must in future be directed almost exclusively towards conservation. At the same time they were careful to disclaim any wish to discourage original research, but they held that the limited sum which they felt justified in spending on archæological work should primarily be devoted to conserving the known rather than to searching for the unknown.

Accordingly, a fresh reorganization of the Department was decided on. The new scheme provided for the constitution of five Survey Circles, namely: Madras, with Coorg; Bombay, with Sind and Berar; the Punjab, with Baluchistan and Ajmer; the United (then North-West) Provinces, with the Central Provinces; and Bengal, with Assam. Each Circle was to be placed in charge of an Archæological Surveyor, to be paid imperially but controlled provincially, whose main duty it would be to complete the classified lists of archæological remains and to advise the Local Governments as to the effective preservation of these remains. A separate provision was made for Burma. Further, the appointment of Epigraphist was made permanent, so long as Dr. Hultzsch—an officer of exceptional attainments—might continue to hold it. There had been a proposal, while the scheme was under discussion, to abolish the appointment of Government Epigraphist and to discontinue the publication of the *Epigraphia Indica,* on the ground that private individuals and learned societies might more appropriately undertake both the expenditure and the labour; but the arguments against the idea were so forcible that it was eventually abandoned. In particular, it was realized that Dr. Hultzsch and his staff were the only living people competent to decipher the old Dravidian inscriptions, and, further, that epigraphy was not only

a subject of scientific interest to the learned world, but also one which might sometimes throw useful light on problems of modern administration. But as Dr. Hultzsch was essentially a South Indian specialist, the Government of India, while deciding on his permanent retention, proposed to encourage the entertainment of Honorary Epigraphists in other provinces and to relax Dr. Hultzsch's editorial monopoly by allowing them to prepare inscriptions for publication in the *Epigraphia Indica*.

The foregoing scheme contemplated, it will be observed, that all initiative and responsibility in the matter of conservation should continue to rest with the Provincial Governments, and made no provision for enabling the Government of India to inform themselves as to how this responsibility was being discharged or for the systematized guidance of the local staffs. The scheme came into force in May, 1899, but even before that date the newly appointed Viceroy, Lord Curzon, had made it clear that a new era was dawning for Indian archæology and that his Government would not long be content with the half-measures envisaged in this scheme. In a speech delivered before the Asiatic Society of Bengal on February 1st, 1899, he accepted the encouragement of research, the promotion of archæological study, and the preservation of the relics of the past as part of our imperial obligation to India and announced his intention of pursuing an active policy in this matter during his term of office. A year later, before an audience of the same Society, he elaborated the same theme, and thus graphically condensed the chequered story of the past: 'There has been, during the last forty years, some sort of sustained effort on the part of Government to recognize its responsibilities and to purge itself of a well-merited reproach. This attempt has been accompanied, and sometimes delayed, by disputes as to the rival claims of research and of conservation, and by discussion over the legitimate spheres of action of

the Central and the Local Governments. There have been periods of supineness as well as of activity. There have been moments when it has been argued that the State had exhausted its duty or that it possessed no duty at all. There have been persons who thought that, when all the chief monuments were indexed and classified, one might sit with folded arms and allow them slowly and gracefully to crumble into ruin. There have been others who argued that railways and irrigation did not leave a modest half-lakh of rupees (£3,750) per annum for the requisite establishment to supervise the most glorious galaxy of monuments in the world. Nevertheless, with these interruptions and exceptions, which I hope may never again recur, the progress has been positive and on the whole continuous. It was Lord Canning who first invested archæological work in this country with permanent Government patronage by constituting in 1860 the Archæological Survey of Northern India and by appointing General Cunningham in 1862 to be Archæological Surveyor to Government. From that period date the publications of the Archæological Survey of India, which have at times assumed different forms and which represent varying degrees of scholarship and merit, but which constitute on the whole a noble mine of information in which the student has but to delve in order to discover an abundant spoil.'

Before the close of 1899 the definite proposals of the Government of India were submitted to the Secretary of State. They embraced a definite policy of more active work, of closer supervision, and of larger outlay. The Government of India declared it to be indefensible that they should divest themselves of all responsibility for the preservation of monuments which, in the words of Lord Lytton, are 'for variety, extent, completeness and beauty unsurpassed, perhaps unequalled, in the world.' They felt that it would be the Supreme Government, and not the Provincial Governments, who

would always be held in the judgment of the civilized world primarily responsible for maintaining intact this great inheritance, and they thought it unsafe to trust that the subordinate Governments would always be alive to the importance of the duty or would always be willing or able, under the pressing exigencies of provincial finance, to devote funds to it. They felt the necessity of someone at the head of the operations, who could not only assist local effort from an imperial standpoint with that advice and guidance which had been lacking since the days of Dr. Burgess, but could also maintain a continuous record of the archæological needs of the various provinces, and of the work undertaken to meet those needs. They accordingly urged the re-appointment of a Director-General of Archæology, and the expenditure of a sum of not less than a lakh of rupees per annum for a term of years—to be expended in grants-in-aid for the archæological work of special importance and magnitude. These proposals were sanctioned by the Secretary of State in the latter part of 1901, and the present writer, who was appointed in the first place for a term of five years, arrived in India to take up his duties early in 1902.

But meanwhile—in 1901—another much-needed reform had been put through. Although most of the great archæological monuments of India are situate within the territories administered by the various Local Governments, the Indian States are by no means devoid of interesting historical relics; yet until then no effective machinery had been provided for the work of archæological conservation in these territories. By an order of the Government of India in the Foreign Department, dated the 4th June, 1901, this serious omission was at last remedied. Kashmir, Rajputana, and the Punjab States, as well as Dir, Swat, and Chitral, were added to the charge of the Surveyor of the Punjab-Baluchistan-Ajmer Circle; Baroda, Central India, Hyderabad (Deccan), and the Bombay

States were added to the charge of the Surveyor of the Bombay-Berar Circle; and the States within the political jurisdiction of the Governments of Madras and Bengal were added to the charge of the Surveyors of the Madras-Coorg and Bengal-Assam Circles respectively.

Yet another important matter which Lord Curzon had taken up in the first year of his administration, and which was destined to mark a new era in the history of conservation work in India, was that of legislating for the protection of the ancient monuments and antiquities of the country. The main objects which the Viceroy set before himself were threefold: to ensure the proper upkeep and repair of ancient buildings in private ownership excepting such as were used for religious purposes; to prevent the excavation of sites of historic interest by ignorant and unauthorized persons; and to secure control over the traffic in antiquities. These objects could only be attained by legislation, and inquiries were set on foot for the purpose of ascertaining the law and practice which prevailed in European countries. The outcome of these inquiries was that a Bill was drafted based on the existing English Acts and embodying also certain provisions derived from more recent legislation on the subject in Greece and Italy, but modified in some of its essential features to suit the peculiar conditions of India. The draft of this Bill was almost the first task with which I had to concern myself in India, but most of the spade-work had already been done and the Local Governments had given their unanimous approval to all its essential provisions. In view of the amount of interference which the Bill involved in the rights of private ownership and the need of paying scrupulous respect to every kind of religious prejudice, it says much for the careful and sympathetic handling which it received that not a voice was raised in adverse criticism against it when it eventually passed into law; nor has the administration of

the Act since met with opposition or been attended by any great difficulties.

(b) 1902 TO 1938

The task awaiting me on my arrival in India was a sufficiently formidable one. Lord Curzon's ideas of what had to be done were all-embracing. Our most pressing duty was to attend to the preservation of the national monuments, most of which were in a grievous state of neglect and decay; but the Viceroy attached almost equal importance to the exploration and study of all classes of ancient remains, to the excavation of buried sites, to the copying and reading of inscriptions and to the provision and adequate equipment of museums. 'Epigraphy,' he said in the speech already quoted, 'should not be set behind research any more than research should be set behind conservation. All are ordered parts of any scientific scheme of antiquarian work. I am not one of those who think that Government can afford to patronize the one and ignore the other. It is, in my judgment, equally our duty to dig and discover, to classify, reproduce and describe, to copy and decipher, and to cherish and conserve.' These, in truth, were ideals generous enough to warm the heart of any archæologist with such a vast and wonderful field as India before him. But it is one thing to lay down a policy, another to provide the means in men and money for making it practicable. India is an immense country—two-thirds as big as the continent of Europe—and her monuments are no less numerous and no less magnificent than those of Europe, while her peoples, her languages, her culture, her arts and her religions are just as complex and diversified as they are in the West. In such a field to achieve all that the Viceroy envisaged would plainly have required far more funds and a far larger body of workers than were then available. For in 1903-4 the total allotments to archæology amounted to little

more than four and a quarter lakhs of rupees (about £31,800), of which a little over three-quarters were provided by the Local Administrations and the rest by the Government of India; while as to archæological officers, at the time of my arrival there were only six of them all told, including the Government Epigraphist. In the Western and Southern Presidencies were Henry Cousens and Alex. Rea, both of whom had been brought out years before by Dr. Burgess, and both of whom had been doing admirable work in the measuring up and drawing of the national monuments. In Bengal was the brilliant young German, Dr. Theo. Bloch, a scholar of wide attainments and boundless enthusiasm; and in the Punjab was another most promising scholar, Dr. J. Ph. Vogel, now Professor of Sanskrit at Leyden, whom I still count among my closest friends. Finally, in Burma, there was Taw Sein Ko—half Burman, half Chinese—who had made his mark in the Union at Cambridge, and had a most comprehensive knowledge of the country, its history and its peoples.

Such a small body of officers was, of course, wholly insufficient for the needs of the Indian Empire, and it was clear from the outset that, if we were to do half of what was expected of us, no opportunity must be lost of pressing for an increase of our cadre, improving the pay and prospects of its officers, and securing larger grants for our work. At the same time it was clear that, whatever improvements we might hope for would depend to a large extent on the results we could show for our labours, and it was up to us to make those results as convincing as possible. Presently we shall see how, step by step, we succeeded in achieving our purpose, but nearly twenty years were to go by before the Archæological Department was put on the same, or approximately the same, footing as other collateral Departments of the Government of India; and even then it was mainly due to the War that we at last attained our goal.

By 1903 we were able to secure three temporary, but none the less welcome, additions to the staff, *viz.*: an Architectural Surveyor, W. H. Nicholls, in the United Provinces; an Assistant Superintendent, D. R. Bhandarkar, to help Mr. Cousens in the Western Circle; and in the North-West Frontier and Baluchistan a half-time officer, Dr. M. A. (now Sir Aurel) Stein, who was to combine the duties of Archæological Superintendent with those of Inspector-General of Education. Another important step taken in the same year, and one destined to have far-reaching results, was the creation of state scholarships for the training of Indian students in archæology. Even at that early date it was patent to me that the future of archæology in India must depend more and more on the degree of interest taken in it by Indians themselves, and that the surest means of strengthening my own Department was to provide it with an increasing number of Indian recruits. In the first instance only two scholarships were created—one for proficiency in Sanskrit, the other for proficiency in Persian and Arabic; but later on, when the experiment had proved a success, a third scholarship was offered for Burmese Archæology, and subsequently six more scholarships were added, *viz.*: two for Indian Archæology, one for Archæological Chemistry, and three for Architecture. This policy of attracting promising young Indians to seek a career in the Archæological Department was one of the principal factors which led to archæology being introduced into the curricula of Indian Universities, and indirectly to the widespread enthusiasm for the subject which is now manifesting itself among the cultured classes of India generally. The first Indians to win these Government scholarships and to become my personal pupils were Rai Bahadur Daya Ram Sahni, C.I.E., lately retired from the Director-Generalship and now head of the Archæological Department of Jaipur State, and Mr. Ghulam Yazdani, afterwards editor of the *Epigraphia Indo-*

Moslemica and Director of Archæology in H.E.H. the Nizam's Dominions. Since then most of the Indians serving in the Department have been recruited and trained by means of these state scholarships.

Looking back on those early years, between 1902 and 1905, I cannot help feeling some pride in the great volume of work which, despite our small numbers, we managed to accomplish. Our first thoughts were for preserving the national monuments of the country. In the Agra Fort we had almost completely to rebuild the river front of Jahangir's palace and to demolish scores of British military structures, before we could restore the colonnades around the spacious Diwan-i-Am courtyard; in the same area, too, we freed the Salimgarh from its modern accretions. At the Taj Mahal we cleared the approaches of squalid bazaars, opened out and rebuilt the ruined colonnades of the forecourt, restored the tombs of the maids-of-honour as well as the Fatehpuri Masjid, and laid out the forecourt itself with lawns and trees; and in the inner precincts of the great mausoleum we refaced most of the ruined Jawab, and restored the whole garden, with its pavilions, watercourses and fountains, as nearly as possible to its original condition. Other famous monuments at Agra which were also thoroughly overhauled and repaired at that time were the exquisite tomb of Itimad-ud-Daula and the Chini-ka-Rauza on the further bank of the Jumna, and the mausoleum of Akbar at Sikandra, where, besides other far-reaching repairs, the four half-ruined minarets over the entrance gateway were rebuilt.

By the side of the Ajmer lake in Rajputana, the whole embankment of Shah Jahan, with its stately marble pavilions, was restored to its pristine beauty after the modern offices and bungalows which defaced it had been demolished; and in the same city the Arhai-din-ka-Jhompra, one of the earliest and most magnificent of Indian

mosques, was rescued from a sorry state of dilapidation. At the Jain Dilwara Temples on Mt. Abu, we succeeded in the difficult task of stirruping up a number of broken marble lintels without displacing or damaging the exquisitely fragile traceries; and within the Chitor Fort we intervened to prevent the Tower of Fame being dismantled and rebuilt, and were able to save the Darbar a considerable sum of money by confining the repairs to the crowning storey.

In Central India, with the active help of the Dhar Darbar, a wide-reaching scheme of conservation was put in hand among the two little-known but splendid groups of monuments which the Kings of Malwa erected at Dhar and Mandu. Roads were opened up, jungle-growths removed, and substantial headway made with the repair of some of the ruined structures, notably with the Jami Masjid, Hindola Mahal, Tomb of Hoshang, Ashrafi Mahal, Tower of Victory and Tomb of Mahmud the Great, the two last having to be dug out from the vast mounds of débris in which they had long been lost to view. Similarly, with the help of the Chhatarpur Darbar, we took in hand and actively prosecuted a comprehensive campaign among the Hindu and Jain temples at Khajuraho, which comprise some of the noblest examples of temple architecture in India.

In the neighbourhood of Delhi, extensive repairs were carried out to many historic edifices, including the Quwwat-ul-Islām Mosque, founded by Qutb-ud-Din Aibak in 1191, to the Qila-i-Kuhna Masjid of Sher Shah, with its richly coloured incrustations; to the fortress mausoleum of Ghiyas-ud-Din Tughlaq; to the lovely tomb of Atgah Khan, foster-father of Akbar, with its delicate marble reliefs and inlaid tile-work; to the mausoleum of Humāyūn, where an unkempt wilderness was transformed into a well-laid-out garden—fit setting for the resting-place of the Emperor; and to the Tomb of

Isa Khan, where a whole village was removed from the walled enclosure and the tomb itself thoroughly overhauled. But the biggest project of all at Delhi was the restoration of the famous Mughal gardens in the Fort of Shah Jahan, with their water-courses, fountains, flowered causeways and parterres, which had been half destroyed and buried deep in débris at the time of the Mutiny, when many of the palace buildings were blown up. The whole undertaking took ten years to complete, but before the close of 1905 all the modern military buildings had been removed and most of the Hayat Bakhsh garden, with its marble pavilions and the so-called Secretary's house, overlooking the river, had been effectively dealt with. Here, too, we restored to the throne of the Great Mughal the mosaic panels, including the well-known picture of Orpheus fiddling to a group of listening animals, which had been carried off after the Mutiny, and which Lord Curzon succeeded in getting back from the Victoria and Albert Museum. Outside the Palace Fort the Zinat-ul-Masajid, which had long served as a bakery for the troops, was reconverted to its proper use.

So, too, at Lahore, the beautiful Pearl Mosque was stripped of the ponderous surround of brick with which it had been turned into a Government Treasury, and its glistening marbles once again disclosed to the light of day; the Chhoti Khwabgah (sleeping hall) of Shah Jahan, which had been covered with an ugly quasi-Gothic roof when it was appropriated as a church for the troops, was suitably re-roofed and in other ways restored; and the tile-enamelled mosque of Dai Anga, in the city, was disinterred from a complex of railway offices in which it had been buried from view. At Shahdara the Tomb of Jahangir was also an object of careful attention, and much was done to arrest decay in many of the edifices connected with it.

In the Eastern Circle our chief task in those years was concerned

with the wide-flung ruins of Gaur and Pandua—capitals of the independent Sultans of Bengal; and the task was more than ordinarily difficult owing to the perishable nature of most of the monuments, which are built of brick and enriched with carved reliefs in the same material or adorned with terra-cotta panels or coloured tilework—all liable to rapid disintegration in the damp and jungly region of Bengal. Among the first monuments to be conserved on these two sites were: at Pandua, the great Adina and Golden Mosques and the Eklakhi Tomb; and at Gaur, the Dakhil Darwaza, Lattan, Tantipara and two Golden Mosques and the Firoz Minar. Other buildings in Bengal which also came in for early attention were the Sath Gumbaz Mosque at Bagerhat, the mosque of Zafar Khan Ghazi at Tribeni, five Hindu temples at Vishnupur in the Bankura District, which seemed specially representative of local styles of Bengal architecture, and the Asoka pillar at Rampurva, which was raised from a swamp and set on high, dry ground near by.

In Orissa the stupendous fabric of the Black Pagoda at Konarak, the biggest of all temples in the Northern style, was excavated from the deep accumulations of fallen stones and drifting sand in which it lay half-buried, and the unsuspected plinth with its carved horses and chariot-wheels was brought to light. At Bhuvanesvar, urgent structural repairs were effected at the Muktesvar and several other mediæval temples; and at Khandagiri, the age-worn cave temples of the Jains were saved from threatened collapse, while the two stone elephants guarding the front of the Ganesa Gumpha were pieced together out of a multiplicity of fragments and set on their feet again.

In the Bombay Presidency an unusually difficult piece of work was the repair of the colossal cornices and dripstones of the Gol Gumbaz, Ibrahim Rauza and Jami Masjid, large sections of which had in all three cases fallen to the ground; and a restoration much

welcomed by the local Muslims was that of the mosque attached to the first mentioned of these buildings, which had long been serving as a rest-house. At Ahmadabad in the same circle the tombs of Shah Alam, Achyut Bibi and the Queens of Ahmad Shah came in for various improvements, and at Burhanpur in the Central Provinces the ruined fortress towering high above the Tapti river, the Jami Masjid, and the tombs of Shah Shuja and other local chiefs, were put into a state of sound structural repair.

In the Madras Circle, as might be expected in that tropical climate and after years of neglect, our initial energies were mainly exhausted in rescuing buildings from exuberant vegetation, opening up approach roads and doing only such provisional repairs as were imperative. Especially was this the case among the ruins of Vijayanagar, which stretch over an area of more than nine square miles, and among those of Tanjore and Conjeeveram. Repairs, however, of a more or less radical and lasting nature were effected to the Ganesa, Krishnasvāmi and Hazāra-Rāmasvāmi temples at Vijayanagar, as well as to the Kailāsanātha temple at Conjeeveram, while other important monuments in the Presidency that simultaneously received careful attention were the Vishnu and Siva temples at Tadpatri, the rock-cut shrines in the face of the Trichinopoly Rock, the Jalakanthesvara temple at Vellore and the Chennakesavasvāmi temple at Sompalle.

Finally, in Burma, the two main centres on which our labours were focused were the mediæval capitals at Pagan with its endless array of imposing pagodas, and the relatively modern fort and Palace at Mandalay. At Pagan, our campaign—still in progress—opened with the preservation of the Ānanda and four of the other chief pagodas, the Bidagat Taik Library and the Nān Payā shrine. At Mandalay, our most urgent task was the dismantling and re-building of the lofty palace spire, which was found in a most pre-

carious condition; but some striking improvements in the appearance of the fort were also effected by the restoration of some of the elegant pavilions (*pyathats*) on the surrounding walls and by the removal of obtrusive evidences of British occupation, including those of the Mandalay Club, which had long been established in the royal apartments.

To-day, most of the conservation work done in Northern India is carried out from start to finish by the Archæological Department itself. This, however, was not always so. At the time of which I am writing, we had to depend for the actual execution of our repairs on the Public Works Department and its contractors, our own officers being responsible for deciding in the first place on what was to be done, for checking the estimates and subsequently for watching the progress of the operations. We were working therefore in the closest co-operation with the Public Works Department, and I remember with gratitude the ever-ready and friendly help which we received on all hands from its officers, the wonderful resource with which they were prepared to meet all difficulties, and the generally high quality of their work.

Before the increasing tasks imposed by all this conservation work, the elaborate survey-work which had hitherto constituted the main duty of the provincial officers had necessarily to give way. Nevertheless occasional opportunities were still found for continuing it. Thus, in Western India, Mr. Cousens completed at this time a fine series of drawings and photographs of the Dilwara Temples on Mt. Abu, as well as a portfolio of exquisite colour reproductions of Sind tilework. In the Madras Presidency, Mr. Rea carried out a detailed survey of the Vijayanagar site, and the same officer completed the illustrations for two monographs: one on the architecture of Malabar, the other on the architecture of the Kistna, Anantapur, North Arcot and Madura Districts. In the United Provinces

drawings were made of the majority of the buildings in the Agra Fort; and in the Punjab Dr. Vogel and his assistants copied in colour about half of the enamel tile panels on the face of the Lahore Fort. Elsewhere permanent records were made of a number of monuments, which for one reason or another it had been decided not to conserve.

While, however, this sort of detailed survey-work had to be rigidly curtailed, the cataloguing of the ancient remains of the country was taken up again with increased vigour, since it was recognized that this was an indispensable preliminary to any systematic programme of conservation and research. In many parts of India catalogues were already in existence, notably in the Bombay and Madras Presidencies, Coorg, the Central Provinces and Berar and the United Provinces of Agra and Oudh; and besides these, rough provisional catalogues had also been made for the Punjab, Bengal and Burma. Before the close of 1905 catalogues in a final form had been completed for the Nizam's Dominions and Bengal, the existing catalogue of the United Provinces had been extensively revised, and substantial headway had been made with those for the Delhi, Lahore and Kangra Districts of the Punjab, of the Peshawar District and of Upper Burma.

In the sphere of Epigraphy, Dr. Hultzsch, our official Epigraphist, was devoting all his energies to the collection and decipherment of Dravidian records, and with their help was rapidly building up in outline the history and chronology of the mediæval dynasties of the South: first of the Pallavas, Ganga-Pallavas, Cholas and Rāshtrakūtas, then of the later Pāndyas and Hoysalas of Halebid, and later still of the Vijayanagar kings; and to this dynastic history he also added many valuable particulars in regard to the Saiva revival in the seventh century, the management of village assemblies, and a variety of other subjects. In Burma, Mr. Taw Sein Ko published

two volumes of miscellaneous inscriptions from Upper Burma, to the number of over 200, and also translated 180 records which Dr. Forchhammer had brought together from Pagan, Pinya and Ava. During the same period Dr. Bloch took copies of about 150 Sanskrit, Persian and Arabic records in Bengal, and Mr. Cousens of nearly 750 in Western India, including some 300 from the neighbourhood of Mt. Abu. In Central India some magnificently engraved slabs were discovered built into the mihrāb (niche in the centre of the western wall) of a mosque at Dhar, which, besides other records, bore the greater part of a drama composed by the famous Raja Bhoja about the time of the Norman Conquest; and portions of a somewhat similar drama were brought to light in the course of our repairs at the Arhai-din-ka-Jhompra mosque at Ajmer. In the small hill State of Chamba, Dr. Vogel collected a particularly interesting series of epigraphs, including over forty copper-plates, and with their help succeeded in reconstructing the local dynastic lists and in other ways greatly amplifying our knowledge of the State.

As to excavation, one of the principal reasons for my appointment as Director-General was that I might introduce into India the scientific methods of digging which had yielded such brilliant results in Greece and Crete, and it was incumbent on me, therefore, to take whatever opportunity I could to give my colleagues the benefit of my experience in Greek lands, and, above all, to train my young Indian scholars in this class of work. It was to this end that in the spring of 1903 Dr. Vogel and myself did some trial digging at Charsadda, the ancient Pushkalāvatī, on the Swat River; and that in my subsequent excavations I invariably had some of my Indian scholars learning the technique of excavation. As to the discoveries which we made at that time at Charsadda and other sites—at Sarnath, Kasia, and Rājagriha, all famous in the annals of Buddhism; at Basarh, the ancient Vaisālī; among the tumuli at Lauriya Nandan-

garh; and in the prehistoric cemetery at Adittanallur in Madras—all these are described in other chapters of this book, and I need say no more about them. I should like to explain, however, why at that period, whenever we had any time at all for excavation, we busied ourselves chiefly with well-known Buddhist saṅghārāmas (monasteries) and did not turn our attention to the larger city sites where we could hope for discoveries of an entirely different and perhaps more illuminating order. The reason was twofold. In the first place we were at that time better informed—thanks to the Chinese pilgrims and the researches of earlier archæologists—about these Buddhist monuments generally than about any other class of remains, and it seemed to me safer, therefore, to start with these and make sure of our ground before groping our way further into the unknown. The other reason, which I do not hesitate to confess, was that we were more likely to get spectacular finds on these Buddhist sites than anywhere else, and such finds were absolutely indispensable to us, if we were to interest the public in our work and secure more adequate funds for it. As events proved, the policy was amply justified; for not only did we recover an array of magnificent sculptures and other antiquities which appealed at once and widely to the public, but we laid the foundations for our future work far more securely and rapidly than we could otherwise have done. I may add that in the course of twenty years of digging at Taxila I found it advisable to be frequently varying my programme, at one time occupying myself with Buddhist monasteries scattered over the countryside, at another with one or other of the city sites; for although the latter were archæologically more important, it was the monasteries, with their wealth of sculptures and other objects, that helped especially to keep alive the interest of visitors.

In 1905 it became time to review the scheme of organization sanctioned five years earlier; and the record of the Department's

activities during those five years made it easy to persuade the Secretary of State to accept the Government of India's new proposals. These were to place the establishment on a permanent basis, to raise the pay of the local superintendents and to appoint several additional officers for the North-West Frontier and Baluchistan, the Eastern Circle and Madras. The new scheme, which was sanctioned by the Secretary of State early in 1906, also provided for the transfer of the Central Provinces and Berar from the Western to the Eastern Circle, and the replacing of the post of Epigraphist in Madras by that of Government Epigraphist for all India. This reorganization gave us the services of three officers who were to bring distinction to the Department: Dr. Sten Konow, who was Sir George Grierson's right-hand man in the Linguistic Survey of India and recently Professor of Sanskrit at Oslo; Mr. A. H. Longhurst, now the Archæological Commissioner in Ceylon; and Dr. D. B. Spooner, a scholar of rare ability and subsequently my Deputy at headquarters, whose brilliant labours were cut short by untimely death in 1925.

When later in 1906 Lord Curzon left India, the Department lost its best friend and most powerful patron, though to the end of his life Lord Curzon never ceased to interest himself in its fortunes and, when necessary, to champion its cause. As Viceroy he had been behind all our activities, planning, guiding and inspiring us at every turn, and helping us out of the abundance of his own experience. His energy was unbounded. Wherever he went—and his tours carried him to the furthest limits of the Indian Empire—he never failed to visit any monuments of note in the neighbourhood, to see for himself what could be done for their preservation, and to pen with his own hand detailed memoranda for the guidance of our officers. And he did this often at the sacrifice of his own health and comfort; for though naturally a strong man, he suffered much from an old injury to his spine, and, in spite of his indomitable courage,

must have been sorely tried at times by the long and exhausting hours we spent toiling hither and thither among ruins under a blazing Indian sun. At headquarters he was just as tireless—though in a different way. His archæological correspondence alone in that period covers over 400 quarto pages of print, and during the four years that I worked under him, rarely a week went by that he did not send for me. More than once he received me lying on his back in bed and obviously in pain; but there was always a welcoming smile, and he would go through case after case, discussing each in detail and examining plans and drawings with meticulous care; and when passing orders he always made a point of explaining his reasons and the principles underlying his decision; for it was his purpose, as he used to say, not merely to dispose of the cases before him, but to settle a policy and establish for us guiding rules and principles which should last long after he himself had gone. Had he been my *guru* and I his pupil, he could not have taken more trouble or been more patient and considerate.

The charge has been laid at Lord Curzon's door that he sometimes went too far in the matter of restoration. The charge, as a fact, is quite groundless; for none could have been more scrupulous in preserving the authenticity of a building or more averse from renovation, unless the reasons for it were unassailable. His critics on this score were people who either never set foot on the shores of India or never understood that conditions in a tropical country with luxuriant jungle-growth and other destructive agencies necessitate far more radical and permanent measures of conservation than are required in the West. It should also be borne in mind that most of the monuments with which we had to deal—whether Hindu, Buddhist, Muslim or Christian; whether temples, mosques, tombs or palaces where ceremonies of state are still performed—were still 'living' monuments, in the sense that they still subserved the pur-

pose for which they were erected; and there was no more justification for treating them as antiquarian relics or picturesque ruins than there would be in the parallel cases of, say, Westminster Abbey or Windsor Castle. Indeed, as far as the great Mughal monuments of the North were concerned, the justification was far greater, since Mughal decorative art rarely consists of anything but a repetition of geometric or simple floral patterns admitting of little individuality of treatment, and the traditional spirit of this art, as well as the old methods of technique, are still kept alive by the lineal descendants of the original craftsmen. With these reservations, however, demanded by the particular conditions prevailing in India, the object which Lord Curzon set before himself, and which the Archæological Department has always sedulously pursued, was not to reproduce what was defaced or destroyed, but to save what was left from further injury or decay and to preserve it as a national heirloom for posterity.

In less than six years after Lord Curzon's departure an abortive attempt was made to decentralize most of the scientific Departments, including, among others, the Archæological, Forest and Agricultural. So far as the Archæological was concerned, the proposal was promptly negatived by the Secretary of State. But it had at least one good result, for it evoked a storm of protest in India and England and showed us what a valuable ally we had in public opinion. Not only did the newspapers in both countries unanimously condemn the proposal, but memorials against it were addressed to the Secretary of State by all the leading universities and learned societies of England; and in India there was not, so far as I know, a single Local Government in favour of it. Foremost among those to denounce the idea of decentralization were Lord Curzon and Lord Minto, who had but recently retired from the viceroyalty. The strong support which the latter gave at this junc-

ture carried all the more weight because of the differences, well known to everyone, that existed between the two ex-Viceroys. But Lord Minto was too great a man to be swayed in such a matter by any personal feelings and, as Viceroy, had done everything possible to help forward Lord Curzon's archæological policy. That Lord Hardinge did not at first follow suit was simply because he was then unacquainted with the prevailing conditions. Subsequently both he and Sir Harcourt Butler, the Member for Education, did much to promote the interests of the Department and strengthen my own position as Director-General.

Apart from this contretemps, the Department was left free and undisturbed for several years to press on with its many tasks. Among the officers who joined us about this time or a little earlier were Messrs. Hargreaves and Blakiston, each of whom was to become Director-General; Mr. Gordon Sanderson, a young architect of distinction, who was killed on the Western Front in 1914; Mr. Natesa Aiyar, a promising Madrasi scholar, who died in 1921; and Mr. J. A. Page.

With the advent of war in 1914 much of our work had necessarily to be suspended. Not only were our funds drastically reduced, but several of our staff were on military service, and the army had also claimed many of our trained workmen, among them some 800 out of the 1,200 diggers whom I had been employing at Taxila—a fine record in recruiting and one of which the countryside had reason to be proud!

With the return of peace in 1918, another spell of strangely chequered fortune awaited us—the outcome of the unstable conditions and kaleidoscopic changes brought about by the war. First, in 1921, came a further reorganization of the Department, which placed it virtually on the basis for which I had been striving for a score of years, with an addition to our cadre of six new and much-

needed appointments, and a substantial all-round increase of salaries. As a result of this reorganization, Mr. Ramaprasad Chanda was appointed Superintendent in the Indian Museum, and Messrs. Hirananda Sastri and K. V. Subrahmanya Aiyar to the Epigraphical Branch; but before the other posts could be filled there was another swing of the pendulum, and Lord Inchcape's Committee came out to effect all-round retrenchments in the Government Departments. His Committee at first proposed to reduce our funds by 90 per cent., stopping all exploration and even closing the famous Mughal gardens of Agra, Delhi and Lahore—gardens which for twenty years we had been labouring with such painstaking care to restore. The timely intervention, however, of the Secretary of State and the Viceroy—Lord Reading—prevented this short-sighted step being taken; and thanks to the same intervention the threatened cut was reduced to 22½ p.c., and we were allowed to breathe again.

Fortunately all financial experts were not so unsympathetic to archæology as Lord Inchcape's Committee. To the late Sir Basil Blackett, who was Finance Member between 1922 and 1928, and a man who took a deep and sincere interest in all that pertained to the history, culture and welfare of India, we owed, in 1926, a proposal to appropriate 50 lakhs (£375,000) as a nucleus towards forming a fund for archæological exploration and research and thus ensuring for this object a steady yearly provision in place of the fluctuating sums voted by the Assembly. Sir Basil's proposal was rejected, but opinion in the Assembly showed itself very sympathetic and wholly in favour of an extended and continuous scheme of exploration, with the result that a sum of two and a half lakhs for this purpose was provided in the supplementary estimates for that year, and sanction was given to the temporary appointment of four additional officers to help exclusively in that branch of our work, namely, a second Deputy Director-General and three extra Assis-

tant Superintendents. Two years later these four posts were put on a permanent basis, but have since, I understand, been abolished.

In 1930 another step forward was taken in connection with Muslim epigraphy by the appointment of an Assistant Superintendent and a small staff to help the honorary Government Epigraphist, Mr. Ghulam Yazdani, who, besides being editor of the *Epigraphia Indo-Moslemica,* was also Director of Archæology in Hyderabad State and had only a limited time to spare for the copying and publication of new inscriptions or for re-editing those which had been indifferently published before the *Epigraphia Indo-Moslemica* was started in 1908.

In the foregoing sketch I have confined myself almost exclusively to outlining the organization and history of the Archæological Department, and except in regard to the few years between 1902 and 1905, I have refrained from saying anything about its actual achievements—about the many monuments it has rescued from ruin and repaired; about the great historic gardens it has laid out; about the discoveries it has made and the new vistas it has opened up in the history and prehistory of India; or about the museums it has built and equipped. And, because all these are matters that are being dealt with in other chapters of this book, I have been equally silent about its achievements in the epigraphical sphere, about the surveys it has carried out, the expeditions it has sent to foreign countries, and the various series of Reports and other publications it has issued. There still remains, however, one matter as to which I should like to add a few words. It relates to the extensive archæological library which I brought together in Simla. One of my chief difficulties when I went to India was the total lack at headquarters of any books of reference or photographs of the monuments and antiquities with which I had to deal, and almost the first thing I had to do was to set about getting together this

necessary apparatus. Thanks to the funds provided for this purpose by the Government of India and to gifts of books from some of the Local Governments, I was soon well on the way to building up what to-day is the best archæological library in India, perhaps in Asia. The first *catalogue raisonné* of the library, which now contains some 30,000 volumes, was the work of Dr. Sten Konow and was issued in 1908. Since then author and subject indexes and several supplements have been published, and the catalogues are, it need hardly be said, kept up to date with the help of card indexes. The library has now, I understand, been shifted from Simla to New Delhi.

As to the photographic collection, I was luckily able to procure at once some 8,000 photo-prints from the negatives then in possession of the Indian Museum or of our own local branches in Madras, Bombay and Agra, and to supplement these by extensive purchases from private firms, so that at the end of a twelvemonth I had already acquired a not inconsiderable collection. Since then this collection has been steadily augmented year by year, mainly by the Department's own photographers, until it now numbers some 40,000 prints illustrative of all the chief monuments of note in the country.

What of the future? To prophesy is always dangerous, but, for myself, I have few fears about it. Thirty-seven years ago, when I took the first step towards Indianizing my Department, I was confident that I was doing the right thing. To-day, with half a lifetime's experience behind me and my experiment well tried and tested, I can see that that confidence was abundantly justified. The Indians whom we have trained have proved their ability in every direction. They are good conservators, good excavators, good epigraphists; and they are equally sound as curators of museums, chemists and numismatists. I do not, of course, mean that each

and everyone has an equal aptitude for all these subjects. That would be too much to expect. But I do mean that with proper selection and adequate training, thoroughly capable officers need never be lacking in any of these branches. The greatest difficulty, to my mind, is likely to be encountered over conservation. You can teach a man the principles and technique of conservation, but unless he is endowed with a certain measure of good taste and good judgment, you cannot turn him into a good conservator, any more than you can turn him into a good architect or a good painter. And there is the further difficulty that the young men best suited to this class of work are those who have started out with a sound architectural training, but it is just these men who, in the present backward state of the architectural profession in India, are hardest to find. This, however, is a difficulty which we may hope will disappear in course of time.

And if I have few fears about the ability of the Indian archæologist, I have equally few about the future of the Archæological Department under the new Constitution. I have sometimes heard it argued that in times gone by Indians took no thought for their monuments and antiquities and that, if British control were to be removed, there is every likelihood of the museums being allowed to fall into neglect and the buildings into ruin. I do not for a moment share this view. Let us remember that it is only within recent years—and this is as true of England as it is of India—that Government has awakened to its responsibility for preserving these ancient monuments. If, therefore, Indians were also apathetic, it is hardly to be wondered at. One thing, however, is quite sure: that, whatever they may have been in the past, they are now thoroughly alive to the value of their national heirlooms and at the same time genuinely appreciative of Government's efforts to preserve them. Nothing, indeed, that the British Government has done in India—

neither its railways nor its irrigation, nor its hospitals nor its justice —has ever appealed to the popular imagination so much as the care it has expended on the relics of India's past. This came out with unwonted clearness at the beginning of the Great War, when meetings were being held on every hand in support of Government, and speaker after speaker laid stress on these archæological activities as the strongest testimony of Government's inherent sympathy with the people. Nor has this feeling of gratitude been confined to the supporters of Government. I have met many members of the Indian Congress Party—among them the late Pandit Moti Lal Nehru—who have spoken in equally generous terms. Indeed, so impressed was the Pandit himself by what the Archæological Department had achieved that he went so far as to assure me of the support of his party, if ever we should require it in connection with our work. That, I think, was the sincerest compliment we could have had. That the Government's efforts are equally appreciated by the vast majority of cultured Indians, I have no shadow of doubt, and that is why I am confident that we have nothing to fear —so far as archæology is concerned—from the progressive Indianization of Government.

JOHN MARSHALL.

[For Illustrations to this Chapter, see Plates VIII to XV.]

CHAPTER II

CONSERVATION

(*a*) CONDITIONS AND METHODS

IF in any respect Indian archæology is ahead of other oriental countries, it is in the organization for the preservation of its monuments. This position is due to the early recognition of the necessity of a campaign against the destructive forces of nature. During the early days of the Survey under General Sir Alexander Cunningham, the function of preservation was left entirely to the Local Governments. Thanks to the comprehensive scheme launched by the late Lord Curzon the main lines of approach to the great problem of the conservation of all the national monuments of India were laid once for all in the beginning of the twentieth century. Except in the Netherlands Indies and French Indo-China, the State has not anywhere in the East recognized this obligation of passing on to the next generation the heritage of earlier times. In Egypt, Iraq and elsewhere in the Near East the interest of the private excavator in the subject of his researches rarely induces him to make adequate arrangements for the preservation of the standing monuments brought to light by his efforts. The wonderful preservative qualities of the Egyptian atmosphere and the absence of torrential monsoon rainfall in Western Asia account for the state of preservation of ancient monuments in these parts, despite the inattention of the authorities. In India the suspension of preservation work for even a short period would seriously damage the monuments, and the gardens around the principal buildings would speedily become a mass of jungle.

In order to understand the peculiar difficulties in conserving ancient monuments, it is necessary to sketch the different agencies of destruction. The most destructive aspect of nature is the normally heavy rainfall, particularly in eastern India and along the west coast belt. The effect of the rainfall and the consequent luxuriant growth of vegetation makes it incumbent on the authorities to spend large amounts on the removal of jungle growth several times during the year, particularly at the onset of the cold weather. In a province like Assam it is impossible to expect a standing monument to continue in good condition much beyond a century. Thus the palaces and temples erected with brick and mortar by the Cachari kings at their capital of Khaspur barely a century ago were found to be so honeycombed with roots of trees that it was well-nigh impossible to extricate them from the masonry without breaking it. The palaces of the Ahom kings near Sibsagar have shared a similar fate, and heavy sums have to be annually spent in keeping intact the fabric of the King's palace at Garhgaon. On the entire west coast of the peninsula, practically no remains of Hindu architecture have survived, except some rock-cut caves in sheltered positions, a few temples in the Kanara style and some records on stone and copper preserved by chance. Even the scanty remains of the Portuguese occupation of the west coast, barely two or three centuries old, are almost overwhelmed by an enormous growth of vegetation, and the little money that can be spent on the forts and buildings only touches the fringe of the problem of preserving these mementoes of bygone days.

As one travels inland from east to west in northern India the severity of the rainfall is lessened, and conditions more favourable for the preservation of the monuments are to be found. Here, however, the destruction wrought by the forces of nature is surpassed by the more complete annihilation at the hands of man. In the

plains of the Punjab and Northern India little is left of the architectural efforts of generations except a few monuments in forgotten corners which the ruthless hands of the invading hordes did not reach. In many places the archæologist has had to dig out the story of the buried remains.

In the whole of North India, particularly in North-West India, one great destructive element is the presence of saltpetre in the soil. This makes its appearance on the surface after the evaporation of moisture, attacking the composition of the bricks and aiding their rapid disintegration. In Mohenjo-Daro, the wonderful prehistoric city of Sind, the buildings unearthed in some parts of the main mound, though in excellent condition when disclosed, were covered with white efflorescence within a week and may be crumbling away within a month and utterly in ruins after a year or two. Similar is the case with the buildings at Harappa in the Punjab. Any amount of surface treatment has been found unequal to the task of resisting the inroads of this insidious enemy of brick construction, and the only resource left is to renew at intervals the affected brick surfaces with bricks overburnt to a greenish tint, which seem to withstand the effects of salt. The part played by sea-salts as destructive agents in the case of monuments situated along the coast is equally disastrous, and is well illustrated by the condition of the shore temple at Mahabalipuram near Madras, the Black Pagoda at Konarak in Orissa and the Elephanta and Jogesvari caves near Bombay. During the last three years the Elephanta caves with their world-famous sculptures have received a great deal of attention; and besides extensive measures to prevent the percolation of water, elaborate chemical treatment of the surface of the sculptures has been found necessary.

In her swift-moving and ever-changing rivers, which are liable to oscillate widely within their spacious beds, India has another

powerful source of destruction to her monuments. The tributaries of the Indus must have played havoc with the scores of cities growing on their banks, to which they brought in turn great prosperity and certain destruction. The river Padma, the main current of the Ganges in its lower course, is also named "destroyer of monuments" (*kīrtināsā*), the appellation originally acquired by reason of engulfing temples and other monuments at Rajnagar in the Faridpur district: in the present generation (actually in 1923) it justified the title by embosoming a landmark—a tall spire commemorating two local heroes of the sixteenth century at Rajabari in the Dacca district. The protection of the Archæological Survey was of no avail; all that the Department could do was to take the last photographs of the monument as it was nearing its inevitable doom. The latest instance of disappearance of a protected monument owing to erosion is that of the stupa at Rohkari in the Mianwali district in Punjab, which has been washed away by the Indus. It is now certain that the vagaries of the Indus, which at one time approached and another time receded from the ancient city of Mohenjo-Daro, had something to do with the destruction of the site. The deflection of the present course of the Indus towards the ruins, which is causing a certain amount of anxiety about their safety at the present moment, is a forceful reminder of what might have happened 5,000 years ago.

Another cause of devastation in India is the prevalence of earthquakes, to which the submontane belt of northern India and in particular Assam and Baluchistan at the eastern and western ends are specially liable. The great Bihar earthquake which rocked northern India on January 15, 1934, causing widespread damage to monuments in three provinces, entailed a large outlay in repair and caused a temporary setback to conservation work throughout India at a time of financial stringency. The Quetta earthquake

of May 31, 1935, destroyed the museum in which were housed antiquities brought back from various places in Baluchistan. The Kangra earthquake of 1905 and the Assam earthquake of 1918 left a trail of considerable havoc in their train, and it was years before measures could be taken to undo the damage done to the monuments. In the hill tracts of Bengal and Assam are sometimes to be found combined the worst effects of all the destructive forces of nature, and one wonders how any handiwork of man can survive in the conditions of excessive rainfall, luxuriant vegetation and frequent seismic disturbances.

For a country of the size of India, neither the staff nor the resources of the Archæological Survey can in any way be considered as adequate to the task of keeping watch against the inroads of man and nature on the structural integrity of India's precious heritage. The slow and steady action of nature cannot ordinarily destroy a fraction of what human agency has done in war and in peace. Foreign invasions and dynastic struggles account for the disappearance of most of the civil architecture in the historical period. What has been left in comparative quiet during the centuries of internecine war may be disturbed during the times of peace. Thus the great prehistoric city of Harappa, which was left to settle in its débris for nearly four millennia, was all but destroyed in the nineteenth century by railway contractors who laid their hands on it for the sake of the inexhaustible brick supplies which it yielded for their requirements of ballast. The great pressure of population on Indian soil tends to convert year by year thousands of acres of uncultivated waste into agricultural land, and this in turn leads to the steady removal of stones, bricks and earth from the habitations of old where they have lain for centuries. The great extension of irrigation during the last few years has intensified this process in the United Provinces, the Punjab, the con-

tiguous Rajputana States, and particularly in Sind, where scores of prehistoric sites yet unexplored or only imperfectly known during the last decade stand in danger of being destroyed with the spread of cultivation in the wake of the Sukkur Barrage scheme. In some instances the discovery of valuable historical material in course of digging canals has been brought to the notice of the Archæological Department, but in most cases these reports are not made and the loss to science is incalculable. As an instance of the former may be mentioned the discovery of a large hoard of Kashmir coins found in the course of excavating a canal in the Banda District of Bundelkhand, United Provinces, which corroborated the claim of the conquest of that part by a Kashmir prince made in the well-known Kashmir chronicle *Rājataranginī*. In the Madras Presidency the cromlechs, cists and other forms of burials practised by the historic and iron age inhabitants are in danger of being destroyed by cultivators and amateur diggers; and it is rarely possible for the Archæological Department to take measures before the mischief has been well-nigh completed, in some cases irretrievably. As the reconstruction of the earliest history of the Madras Presidency depends upon the proper examination and fruitful synthesis of the results of these early monuments, the importance of protecting them is obvious.

The initial stages of the work of conservation as it was conceived and accomplished by Sir John Marshall have been detailed in Chapter I of this volume. Suffice it to say that it was his guiding hand and forethought that laid out the principal details of the scheme of conservation, as at present followed in every essential detail by the staff of the Archæological and Public Works Departments who are responsible for this work. The main principles underlying conservation have been clearly set forth in a departmental manual, entitled *Conservation Manual*, which covers the

entire field and anticipates most of the difficulties met with by conservators.

The organization of conservation in the Archæological Survey is based on the Circle system. At present the whole of British India is divided into six Circles, the Frontier Circle including the Punjab, the North-West Frontier Provinces, and Baluchistan. The Northern Circle is in charge of the monuments of the United Provinces. The Central Circle comprises the three provinces of Bihar, Orissa and the Central Provinces, including Berar. The Eastern Circle embraces Bengal and Assam. The Southern Circle is conterminous with the Provinces of Madras and Coorg; while the Western Circle has its jurisdiction over Bombay and Sind. The arrangements for conservation are, however, not uniform in the provinces. Thus, while in North-West India—*viz.*, in the United Provinces, Punjab, North-West Frontier and Delhi—the Department maintains a regular staff of conservation assistants and overseers to execute the entire work both of annual maintenance and special repairs, in Bombay and Bengal much of the work is done by the local Public Works Department under the general supervision of the Archæological Department. In the other provinces, such as Madras, Central Provinces, Assam, Bihar, Sind and Orissa, conservation work is left entirely to the agency of the local Public Works Department except at established centres of excavation, such as Nalanda and Mohenjo-Daro. In all cases the Archæological Superintendents are responsible for initiating the measures of conservation as also for their proper execution, but the degree of success achieved depends on the amount of supervision that the Archæological Department is able to give through its own staff.

The total number of monuments protected by the Central Government in India is 2,662, of which about 1,000 are regularly

under annual and occasionally special repair; while the rest include ancient sites and mounds and buildings in an advanced stage of decay which are 'protected.' Apart from Buddhist, Hindu and Islamic remains, there are also Dutch and English remains, many of which are protected by the Department.

The United Provinces have 685 monuments, of which a large number are sites and mounds. The Province of Bombay contains the largest number of standing monuments, the remains in Bijapur district being the most numerous in the whole of India, *i.e.*, 223 in number. The next largest number is at Agra, in which district 176 monuments are under protection. The Provinces of Bombay and the United Provinces with 679 and 685 monuments respectively account for over half the total number in India. Madras with 350 monuments, which include a group of 91 monuments in the Bellary district, containing the famous Hampi ruins, stands third in number; while the next place is occupied by the Central Provinces with 255 monuments, which are almost evenly divided throughout the area. Delhi with its 144 monuments and the Punjab with 174 are among the best looked after provinces from the archæological point of view. Bengal has 151 monuments, while Sind, Assam and Bihar have between 50 and 60 each. The North-West Frontier Province, Orissa, Ajmer and Coorg have between them some 50 monuments.

Since its inception under Lord Curzon the Archæological Department has placed conservation in the forefront of its programme, and this at present accounts for the bulk of the expenditure. At first the provinces were responsible for meeting the expenditure on conservation, the Government of India only assisting important projects with a grant-in-aid. Since the Montagu-Chelmsford Reforms, the expenditure on conservation has been borne solely by the Government of India, who have in some years spent as much

as nine lakhs of rupees (1 lakh = £7,500). The Inchcape Committee brought down the expenditure to seven lakhs in 1923 and the Retrenchment Committee of 1931 to four and a half lakhs. More recently special grants have been made. It is hoped that with the increasing interest evinced by all sections of the Indian public in this branch of the Department's activities, adequate funds will be forthcoming for the preservation of India's precious heritage.

Before passing on to Buddhist antiquities, which usher in India's historical epochs, a brief reference may be made to the earlier monuments. Among these, the wonderfully preserved prehistoric city of Mohenjo-Daro in Sind stands pre-eminent. Here, as also at Harappa, a scheme of preservation of the exposed brick remains has already been started, and it is hoped that the principal features of the town-planning, the streets, drains, houses and prominent buildings, will be preserved for generations to come. The other smaller sites discovered in Sind, Baluchistan and the Punjab cannot unfortunately be taken in hand for preservation, unless their exploration has advanced considerably, and it is here that the future spells havoc to these unprotected and unexplored treasure-houses of past achievement.

The preservation of the crude dwellings and rock paintings left by primitive man is one of the more difficult aspects of preservation in India. At present, besides a few of these paintings near Hoshangabad in the Central Provinces and in the Mirzapur hills in the United Provinces, there are no other monuments of this type under the care of the Archæological Department. There must, however, be scores of such remains lying hidden in more or less inaccessible parts, to which the conservator's hand will have to be extended some time or other.

K. N. Dikshit.

(*b*) BUDDHIST AND HINDU MONUMENTS

Buddhist Monuments.—The earliest among the Buddhist monuments of India are the pillars and rocks on which Asoka, the pious Buddhist Emperor, engraved his Edicts (see a complete list of Asokan inscriptions in the Appendix to Chapter III [*b*]). Of the former class, the pillars at Lauriya Nandangarh and Lauriya Araraj in North Bihar are intact and under preservation, while the pillar at Rampurva, which was found recumbent, is lying under a shed erected on the site. Two are preserved in Delhi, one at Kotla Firoz Shah and the other on the Ridge. Both were set up in their present places by Firoz Shah Tughlaq in the fourteenth century. Two other pillars, one at Allahabad and the other at Sarnath, are under protection; while the excavation of the Kumrahar site near Patna brought to light another polished sandstone pillar of Asokan origin. As to the rock edicts, there are two in the Frontier Province, one at Mansehra and another at Shahbazgarhi; one at Kalsi, near Dehra Dun; two in Orissa—at Dhauli and Jaugada—and a recently discovered set at Jonnagiri (Yerragudi) in the Kurnool district of the Madras Presidency. The minor Edicts at Sasaram in Bihar and Rupnath in the Jubbulpore district are among the other early monuments regularly preserved by the Archæological Department. Among the stupas, of which some 84,000 are reputed to have been built by Asoka, none have been preserved in their original form to this day, particularly owing to the Buddhist practice of covering the older monuments of their faith with fresh integuments. The original stupas at Sanchi, Sarnath and Taxila appear to have been built by the great Emperor, but it is only in the case of the last that the name Dharmarājikā ('built by the pious king'), inscribed centuries afterwards, is found.

The development of Buddhist stupa architecture has been different in the various regions of India, but few examples have survived to this day. Among these, the most important monument is the stupa at Sanchi in Bhopal State, which, with its wonderful gateways and railings, offers an excellent idea of the splendour of the original (see a full account in Chapter VII [*h*]). After excavating the entire complex and conserving the monuments on the spot with admirable care (see Plate XXXIII), Sir John Marshall made over the monuments to the care of the Bhopal State. The railings around the stupa of Bharhut have been removed from their find-place in Central India to the Indian Museum, Calcutta. The style, as it developed in the second-third centuries of the Christian era in the Kistna Valley, is shown by the decorations on the railings at Amaravati, which are preserved in the British and Madras Museums, but unfortunately the original stupa has entirely disappeared. Other examples, such as the Bhattiprolu and Jaggayyapetta, have also been plundered of their railings, and much of the main body was destroyed before they came into the hands of the Archæological Department for maintenance. Fortunately, a more or less complete Buddhist establishment survived in an out-of-the-way corner near the Kistna river at Nagarjunikonda, and this has been preserved after excavation and the sculptures are exhibited in a local museum built on the spot.

In the Gandhāra country in the north-west, a large number of stupas, which were erected during the Kushāna period, are distinguished by rectangular basements often with niches decorated by figures of Buddha. Very few examples of this type remain, and apart from the group at Taxila and the stupa at Manikiala in the Punjab and the Shapola stupa in the Khyber Pass, there is little left for the Department to preserve. The large monastic complexes in the neighbourhood of Taxila and at Takht-i-Bahi and Jamalgarhi

on the Frontier, which were excavated by the Department, are preserved with great care.

The best preserved monuments of the Buddhists, which have survived intact to the present day, are the rock-cut caves in western India and Bihar and Orissa. The earliest examples are in the Barabar and Nagarjuni hills near Gaya, some of which belong to the third century B.C. In Orissa the caves at Khandagiri and Udayagiri, some of which belong to the Jaina faith, are also among the earliest. The majority of the caves, however, pertain to Western India, where the hard trap was particularly suited for carving out shelters for the sojourn of Buddhist monks. The groups at Bhaja and Karle, Nasik and Junnar, Kanheri and Bedsa are among the principal monuments preserved in the Bombay Presidency, and the problems raised are, in some cases, very complicated owing to centuries-long neglect and the deleterious effect of climate.

Among structural Buddhist monuments, most were brought to light by the activities of the Department, and it is natural that they have been conserved with great care and at great expense and labour. Probably the most striking example of preservation of a famous Buddhist site is Nālandā. This was but a name twenty-five years ago, but is now one of the best-known Buddhist centres where one can visualize much of the original magnificence of this establishment—thanks to the continuous system of conservation initiated by Mr. J. A. Page. The conservation of a monument of one period is comparatively an easy task, but to preserve and demonstrate the successive layers over the original construction is no simple matter; this, however, has been accomplished with conspicuous success at Nālandā. Rajgir, the oldest of the historical capitals of Bihar, has been the centre of archæological activities since 1903; and the Maniyar Math, a cylindrical building most probably devoted to

the old cult of snake worship, has received considerable attention. Another great centre of Buddhism is the well-known establishment at Sarnath, where the remains unearthed extend over a wide range, covering almost the entire period of existence of Buddhism in India from the times of Asoka to the Gaharwar kingdom of the twelfth century. The preservation of the great Dhamekh stupa and other smaller stupas and temples, as also series of monasteries, is well in hand. Recently the outer face of the Dhamekh stupa has been rendered watertight.

In the United Provinces two other sites where excavated remains have been properly conserved are Kasia and Saheth Maheth—the former associated with the demise of the Master and the latter the place of his long sojourn and the scene of one of his well-known miracles. The existing remains at these places are only a few, and their out-of-the-way situation renders difficult the operations of excavation and conservation, but the interest taken by Buddhist pilgrims does not allow the places to fall into oblivion.

Perhaps the only important monument in Bengal belonging to the great Pāla Empire is the great temple and monastery at Paharpur, the ancient name of which has been revealed by the excavation as the 'great vihāra of King Dharmapāla at Somapura.' Here has been found a unique type of architecture—the prototype of the temples of Further India, Burma, Java and Indonesia. It consists of a temple rising in three or more terraces around a central block in the shape of a gigantic cross with rectangular projections between each arm, all embellished with friezes of decorated bricks and thousands of terra-cotta plaques showing a bewildering variety of human and animal motifs, scenes of mythology and folklore. A number of stone bas-reliefs of great artistic and iconographical interest was found in the recesses of the basement. The task of excavating the central temple and the colossal monastic

complex encompassing it took the best part of seven years, but conservation has continued for over twelve years and may take several more years to complete. The climatic conditions of Bengal and the original construction, devoid of any cementing material other than mud, make it incumbent on the Department to attempt a wholesale restoration of the walls exactly on the lines of the original construction. Even then the progressive deterioration in the condition of the exposed terra-cotta plaques and stone panels necessitated other means of protection, such as removal to a place where the elements will not be free to play havoc on them.

In Sind, besides the recently discovered monuments of the pre-historic period, there are a number of stupas, which have been excavated and conserved by the Archæological Department. The most important is the stupa and monastery at Mirpur Khas, which were excavated by the late Mr. Henry Cousens and Professor D. R. Bhandarkar. The latter also excavated another monument known as Sudheranjo-Daro, near Tando Muhammad Khan. The task of keeping these brick-built monuments intact bristles with difficulties caused by the prevalence of saltpetre.

In the Punjab, the most important monuments that have been conserved are the group in and around Taxila, brought to light in the course of Sir John Marshall's prolonged excavations. Here the excavated remains of the different cities that arose one after another and the religious establishments which were located in the outskirts were conserved with great care and forethought. The most striking among the Buddhist sites are: the Dharmarājikā stupa, where a large complex of minor buildings was uncovered round an ancient stupa erected by Asoka himself; Jaulian, the beautiful stupas and monasteries of which, embellished by stucco figures of Buddha, have been preserved *in situ*; the Kunāla stupa at the southern end of the city of Sirkap; Kalawan and Mohra Moradu, where valuable

monastic establishments were discovered. The extensive remains at the city of Sirkap have also been admirably preserved, care being taken to distinguish the constructions of the different periods.

One of the main difficulties which face the conservator of both Buddhist and Hindu monuments is the fact that the use of mud mortar in masonry and the corbelled or pillar-and-lintel mode of construction render these buildings peculiarly liable to destruction as soon as the fabric has disintegrated. Once the strength of the bricks or the mutual hold of the stone masonry is lost there is generally little to be done by way of support or patchwork, and the entire structure has to be dismantled and rebuilt with cement or lime masonry. The use of the modern material has, however, to be carefully camouflaged by raking out the joints.

Hindu Monuments.—The earliest Hindu monuments are the simple and flat-roofed temples of the Gupta period in the north and the caves at Badami in the south. The most outstanding example of Gupta temples in North India are the stone temples of Deogarh in the Jhansi district and a group of seven or eight brick temples in various degrees of preservation in the districts of Cawnpore and Fatehpur. In the Punjab the only examples of Hindu architecture are the group of temples in the Kangra district, the most important of which are the temple of Baijnath at Kiragram and the rock-cut temples at Masur and a group of much-weathered temples in the Kashmir style of architecture at Amb, Malot and Katas in the Salt Range. Later temples in northern India under preservation are a group of temples in the Bundelkhand Division erected under the inspiration of the Chandella kings in the tenth to twelfth centuries A.D. The best examples of the latter style, distinguished by a tall spire, are at Khajuraho in the Chhatarpur State, where the Archæological Department assisted largely in the conservation.

The only noteworthy examples of Hindu architecture in North India after the Muslim conquest are a group of four temples at Brindaban erected by Raja Man Singh under the protecting shadow of Akbar the Great, but desecrated in the time of Aurangzeb. These temples are now being protected by the Department. In the Province of Bihar no Hindu remains are preserved, except the Mundesvari temple in Shahabad district which, though belonging to the seventh century, has later received extensive repair, and a few examples of rock-cut sculptures along the bed of the Ganges in Bhagalpur district. In Orissa, on the other hand, the most magnificent examples of Indian temple architecture are to be seen at Bhuvanesvar, Puri and Konarak. Of these, the protection of the great Konarak temple, also known as the Black Pagoda, standing as it does on the sea-coast and in danger of erosion by sand, entails great care and responsibility. The great temple at Bhuvanesvar and other important examples of this style, as it developed between the eighth and twelfth centuries at this place, are still in use for religious worship and in the hands of the custodian priests, who are unwilling to submit to the requirements of the Department. Only one, and the latest example of the Bhuvanesvar style, *viz.*, the Raja Rani temple, is in direct charge of the Department.

In Bengal the Hindu relics are mainly a group in the south-west part of the province which remained comparatively free from the influence of Islam. Prominent among these are the temples, predominantly Vaishnava, at Vishnupur, a small kingdom which maintained a state of semi-independence in the sixteenth and seventeenth centuries. Earlier examples of spired temples in brick and stone are found at Bahulara, Barakar and Jatar-deul in the Gangetic delta; the first named has been thoroughly repaired. The main characteristics of the general type of Bengal temple (which includes

some very ornate examples of memorial towers called maths) are the curvilinear roof and the intricate terra-cotta decoration of the façades and walls.

In Assam, the earliest extant remains are a few ruined shrines of the Gupta period and some carvings, sculptures and ruined structural temples of the tenth century mostly near Gauhati and Tezpur. The rapid growth of vegetation and fast disintegration, for which the climate of Assam is responsible, is highly detrimental to the preservation of remains. Most of the surviving standing monuments belong to the late Ahom period of the seventeenth and eighteenth centuries, and include the groups of temples at Sibsagar, Jaisagar and Gaurisagar, which are named after the ruling kings and queens of the Ahom dynasty. In the hills separating Assam Valley from the Surma Valley are some examples of impressive but crude monuments of the Cacharis, notably those at Dimapur, where a number of stone pillars of the "chessman" and "buffalo-horn" types are preserved in a sixteenth-century brick enclosure; but even these relics, barely a century and a quarter old, require a considerable amount for their preservation.

In the Central Provinces a large number of Hindu temples stand in a more or less satisfactory state of preservation, but owing to their remoteness, little beyond ordinary jungle clearance has been effected. They fall into four groups. In the north is the area which, under the domination of the powerful Kalachuri kings of the Chedi country, boasts of a number of temples, particularly in the Jubbulpore and Damoh districts. In the east the district of Bilaspur, which was the seat of another branch of the Kalachuri kings, contains a large number of important temples. The earliest among these is the Lakshmana temple at Rajim in the Raipur district, which is among the most interesting examples of early brick temples. A third group refers itself to the Bhandara and Chanda

districts in the south, where a large number of temples ranging from the tenth century onwards are left to the care of the Department. One of the most important centres here is Markandi in Chanda district, where a group of fine temples with beautiful sculptures still awaits proper treatment. In the southern portion of Berar, notably in Buldana, a number of monuments referring themselves to the times of the Yadava rulers in the twelfth century are in the list of monuments under preservation. The Gond rulers, who are the aborigines of the provinces, have left a remarkable series of monuments in the Chanda, Jubbulpore and Chindwara districts. Interspersed among the temples referring themselves to the Brahmanical faith are the shrines and images set up by the Jains, some of which are on the protected list, but most are looked after by the community itself. The most outstanding monuments of the Jains are situated in the States of Kathiawar, Rajputana, Central India and Mysore. The rich and pious Jain community considers it a point of honour to attend to their ancient places of worship, but in this process of renovation the authenticity of the early examples is almost entirely lost. As an exception to this may be mentioned the conservation work at the well-known Dilwara temples on Mount Abu in Rajputana, where the Jain restorers have been scrupulously following the methods of work laid down by Lord Curzon after his visit in 1903.

In the Madras Presidency, where Muslim influence was not appreciably felt and the religious and architectural traditions have continued strong till our own days, it is generally at the more outlying places not claimed by the worshippers that the monuments have been allowed to be taken over by the Archæological Department. The earliest monuments are centred in the Chingleput district at Mahabalipuram, where a number of magnificent rock-cut temples and sculptures were erected in the seventh century by the

Pallava rulers, and at Conjeeveram, where some of the earliest structural temples erected by the Pallavas (such as the Kailāsanātha and Vaikunthaperumāl temples, with their iconographic and artistic wealth of sculptures) are found. The best examples of the Chola style is the Brihadisvara temple at Tanjore, erected in the eleventh century, to the architectural and epigraphical importance of which has recently been added the interest of the frescoes, which lie in two layers one above the other. This complicated work of disengaging the upper layer of paintings, which come down from the sixteenth century, and of exposing the earlier paintings of the Chola period constitutes one of the major problems of future conservation. The largest number of monuments at one place in the Madras Presidency is at Hampi in Bellary district, where the ruins of the magnificent Vijayanagar capital stand in picturesque desolation. The temples, palaces, and bazaars, even in their present ruined condition, bear eloquent testimony to the glory of the fallen empire, which by bringing unity and peace throughout southern India stimulated so much architectural activity in the Madras Presidency. Most of the great temples in South India, such as those at Madura, Trichinopoly, Rameswaram, Chidambaram, Tinnevelly, etc., are looked after by committees set up under the general supervision of the Hindu Religious Endowment Board in the Madras Presidency. In the circumstances the best that can be done by the Archæological Department in the matter of conservation is to have an understanding with the Board that no scheme of reconstruction is to be undertaken without consulting the Archæological Department.

Of the Hindu monuments comprised in the architectural heritage of Western India as many as 301 are now under State protection. Beside famous Brahmanic Cave shrines, this number includes examples of every kind and condition of structural architecture

which developed under Hindu auspices in different regions of the Bombay Presidency between the sixth and the thirteenth centuries. In this period Hindu architecture assumed, owing to climatic and geological conditions, three distinct styles known as the Chalukyan (Early and Later), Yadava or Hemadpanthi and Solanki. These monuments are nearly all religious edifices, such as temples, tanks and inscribed stone slabs. A series of forts and citadels are also included among the protected Hindu remains of these parts, but they mostly belong to the seventeenth-eighteenth centuries.

The best examples of Hindu Cave architecture now kept in a state of permanent preservation are the rock-cut temples of Elephanta (500 to 600 A.D.) near Bombay and of Badami (600-700 A.D.) in the Bijapur district. The Elephanta Caves have revealed a group of seven excavations. The Great Cave facing north measures 130 feet square. Most of the columns have been replaced by modern ones of equal massiveness and design, while some original ones are kept together by clamps and bands. The most striking feature of the cave, however, is its sculptures, beautiful examples of early mediæval Hindu art. The remaining six caves, though not rivalling the majesty of the Great Cave, have not received less preservative attention.

Another important group of caves which have been rescued from oblivion and are being kept in a good state is the one at Badami in the Bijapur district, comprising three excavations of Brahmanic origin and one of Jain construction. Badami was the capital of the Chalukyas from the sixth to the eighth century. These caves are dug out of the side of a huge rock in ascending order. Slightly later than Elephanta may be dated the Brahmanic Cave Shrine of Jogesvari near Andheri in the suburbs of Bombay, which is the second largest in the Bombay Presidency and third largest in the whole of India. Its preservation has proved a difficult task, as seven

out of ten pillars of its verandah had to be replaced by new stone masonry columns of matching patterns and design.

The earliest dated Hindu temple of stone masonry yet discovered in western India is the temple of Meguti of the early Chalukyan style at Aihole in the Bijapur district, bearing an inscription of King Pulakesin II in the Saka year 556 (A.D. 634-5). The most important earlier temples at Aihole and others of the same period have been preserved against decay. A series of temples of the later Chalukyan period, each with its definite individualistic features more or less intact, is under protection in the Kanarese districts of Dharwar and Bijapur.

Other Hindu remains which are conserved are the temples in the Maharashtra country of the Bombay Presidency, none being prior to the tenth century; the most important are those at Sinnar (Nasik district), Balsana (Khandesh district) and a fine temple of Ambarnath (Thana district).

Certain palaces and citadels of the Maratha hero Sivaji (1627-1680) and his brilliant successors the Peshwas (1714-1818) are also protected. In the heart of the city of Poona the Shanwarwada Palace, built between 1730 and 1732 by the Second Peshwa, Bajirao Ballal, is now receiving concentrated archæological attention. The most famous of Sivaji's forts is at Rayagadh in Kolaba district. These forts have a value as illustrating the style of military architecture in the seventeenth century.

At the time of the architectural development of the western Chalukya empire in the south, another branch was promoting similar activity in the Gujarat and Kathiawar regions in the north. The products in the form of temples and tanks of the activity of the northern Chalukyas ruling between the eleventh and thirteenth centuries now pass under such distinguishing labels as the Indo-Aryan architecture of Gujarat, the Jain style of architecture in

Western India, Solanki temples of Gujarat and Kathiawar, and sometimes also as the Chalukyan architecture of Gujarat. The famous Jain temples of Mount Abu in the Sirohi State mark the most ornate representation of this style now extant. Not much, however, has survived Muslim invasions in Gujarat. The two outstanding examples of the temple remains of those days which are being preserved for what they are worth are one at Bhavka near Dohad in the Panch Mahals and the other at Sarnal, forty-four miles south-east of Ahmadabad. Many noble examples of tanks and reservoirs constructed in rich masonry and imposing designs have been found intact and are being preserved; also the stepped well, which is an architectural product peculiar to Gujarat. The oldest well under protection is that of Mata Bhavani, just outside Ahmadabad, which dates from the time of Karna Solanki (1063-1093).

Recently pamphlets have been issued by the Department in the different vernaculars of southern and western India drawing the attention of those in charge of temples to such prevalent abuses as whitewashing over architectural and sculptural masterpieces, besmearing images and sculptured stones with oil, and removing old carvings and inscriptions in the course of modern reconstruction of temples. It is hoped that these efforts to interest the public and the custodians of monuments will bear fruit and that public opinion will be gradually aroused to a greater sense of responsibility in the matter of preserving our ancient heritage. In a country of the size and complexity of India the co-operation of the public in the task of preservation is an essential factor, without which the efforts of the Archæological Department will be of little avail.

K. N. Dikshit.

(c) ISLAMIC MONUMENTS

(i.) Northern and Eastern India

The activities of the Archæological Department under the head "Conservation" are more noticeable in Muslim monuments, which, being generally in a better state of preservation than the old Hindu and Buddhist monuments, responded readily to treatment. The style of architecture of these monuments is arcuate, being based on arches, vaults and domes as contrasted with the trabeated construction of Hindu temples. Again in contrast with the latter, the Muslim buildings are not profusely embellished with carvings, and their ornament consists of geometrical and floral pattern, admitting of little individuality of treatment. Constructed as they are of brick or stone laid in lime—for the first time in Indian buildings—they have resisted successfully the destructive effects of atmosphere. Cracks in their arches or domes, however, may involve dismantling and rebuilding, but treatment with cement grouting is generally found effective. The principles governing conservation operations in general have been applied to these monuments, and it is only in limited cases, notably at the palaces and tombs of the Mughal Emperors at Delhi and Agra, that restoration of ornament has been effected. Indeed, the grace and magnificence of these edifices and, above all, the historical importance attached to them, demanded such treatment to revive their former glory.

The Muslim monuments are scattered more or less throughout the country, but their chief centres are such places as were the capitals of the Muslim empire or the independent provincial monarchies. After the passing of the Ancient Monuments Preservation Act in 1904, the monuments possessing architectural merits and historical associations were brought under its operation,

and the Archæological Department started a systematic campaign of conservation. The Muslim monuments in British India under the charge of the Archæological Department number in all 1,011, composed of 241 mosques, 318 tombs, 115 forts and palaces and 337 miscellaneous buildings, such as serais, wells, Kos Minars (Mughal milestones), bridges, etc. In spite of the religious sanctity attached to mosques and tombs, many were utilized for residential purposes, and the condition of secular buildings was still worse. The Archæological Department has rescued these ancient monuments from sacrilegious misuse, and they have now been restored to their original state. Caretakers have been appointed; and in the case of monuments which are privately owned, agreements have been executed with their respective trustees or owners. Secular buildings in private possession are, however, acquired compulsorily under the Ancient Monuments Preservation Act, if their trustees or owners fail to enter into agreements in respect of them, but this procedure cannot be adopted with regard to buildings used for religious observances.

The following account will give an idea of the activities of the Archæological Department in preserving these priceless relics from destruction. The monuments in different localities have been parcelled out in separate groups, and for the sake of brevity only important ones of each group have been noticed.

Delhi.—The Muslim monuments at Delhi enjoy the central and pre-eminent position. If one leaves out of consideration the early conquest of Sind by the Arabs in the beginning of the eighth century, and the subsequent inroads of the Ghaznavids, who overran northern India in the first quarter of the eleventh century, it was at the close of the twelfth century that the Muslims established their power permanently in India by the conquest of Delhi. They selected that city for their capital, and it was there that they erected

their first memorials. For more than seven centuries several dynasties of Muslim rulers succeeded one another; and there is a galaxy of splendid monuments remarkable for their antiquity, beauty and historical interest. The first building erected was the mosque known as Quwwat-ul-Islam Masjid, having the famous Qutb Minar for its Mazina (a tower for sounding the Azan or call for prayers). It was constructed by Qutb-ud-Din Aibak, the slave and successor of Sultan Muizz-ud-Din Ghori, the conqueror of Delhi, on the site of a Hindu temple, and was subsequently extended by Altamish and Ala-ud-Din Khalji. The mosque and the surrounding buildings had been reduced to masses of ruin. The clearance of the site was undertaken from 1912 to 1916. The area, which was excavated and arranged as a garden, includes the Quwwat-ul-Islam Mosque with its extensions, the tomb of Altamish, the tomb and college of Ala-ud-Din Khalji, the Alai Darwaza, and the tomb of Imam Zamin. For this purpose a public road was diverted, and unsightly modern buildings removed. In the Quwwat-ul-Islam Mosque the lower plinth of the original building was unearthed some five feet beneath the ground level, and the remains of Altamish and Ala-ud-Din's extension as well as the base of the Alai Minar were disclosed. Under the tomb of Altamish there was discovered a crypt which contained the real grave of the emperor. At the tomb and college of Ala-ud-Din Khalji the position of the outer wall on the north, east and west was determined, and the remains of what appeared to be a grave were revealed in the central compartment some seven feet beneath the surface. The excavation of the Alai Darwaza disclosed the deep and elaborately carved plinth as well as the remains of original steps in the south and west doorways, which were covered by modern steps. In the same area the precincts of the tomb of Imam Zamin, east to Alai Darwaza, were cleared. The dislodged stones of the lofty

arched screen were reset, while the dilapidated masonry of other structures was repaired. Several of the pillars in the colonnade of Altamish, which had gone out of plumb, were dismantled and re-erected. Thanks to the extensive repairs executed to the Alai Darwaza and the Qutb Minar under Major Robert Smith in the first quarter of the nineteenth century, these buildings were found in fair condition. The Qutb Minar had been struck twice by lightning during the Muslim period and was repaired by Firoz Shah Tughlaq and Sikandar Shah Lodi, as recorded by the inscriptions on the doorways of its topmost and first storeys. It was struck again by lightning in the year 1803, when the cupola surmounting it was thrown down and the whole structure was seriously injured. In the repair Major Smith replaced the cupola by a red sandstone chhattri and provided balustrades of the same material round the balconies. The new chhattri, being of late Mughal style, was not in keeping with the monument; it was removed in the year 1848 by the order of Lord Hardinge, then Governor-General of India. It still exists and is placed to the south-east of the Quwwat-ul-Islam Mosque. The ground between the excavated buildings has been lowered to its former level, the open courtyards have been planted with grass and the vanished colonnades with shrubberies. The various monuments have been connected with pathways, and they are now seen in coherent relation to each other.

Previous to 1903 Shah Jahan's Fort at Delhi and the immediate surroundings were in a most neglected condition. Many of the buildings were sadly in need of repair, and the area was crossed by modern roads and disfigured by unsightly military buildings. The Archæological Department drew up a scheme for the improvement of these buildings, which was completed in eight or nine years. The courtyards in front of the palaces—*viz.*, the Diwan-i-Am, the Mumtaz Mahal, the Rang Mahal, the Khas Mahal, and

the Diwan-i-Khas—were excavated to reduce the ground to the original level, whereby the foundations of the vanished arcades were revealed. Similarly the Bagh-i-Hayat Bakhsh to the north, which was an old Mughal garden in the Delhi Fort, was cleared and replanted. The two marble pavilions contained therein were overhauled and conserved. All the other palace buildings were relieved of modern accretions, and restored to their former condition. The roof of the Diwan-i-Khas (hall of private audience) was renewed, and the modern ceiling ornamented with gold painting was repaired. The pietra dura ornamentation in the recess behind the royal seat at the Diwan-i-Am (hall of public audience) was renovated. The decoration consists mainly of black marble panels inlaid with a variety of coloured stones in designs of birds and flowers. The central panel represents the figure of Orpheus sitting under a tree with a lion, a leopard and a hare at his feet, and fiddling to a circle of listening birds. At the time of the Mutiny in 1857 many of these panels were picked out and taken away, and twelve ultimately reached the South Kensington Museum. During the Viceroyalty of Lord Curzon the Trustees of the Victoria and Albert Museum agreed to return the panels. They were reset in 1903, but still the restoration was not complete. An Italian mosaicist was brought to India, and the work completed in 1909. The well-known palaces of the Delhi Fort have been restored to their former condition and are maintained in perfect order.

The transfer in 1911 of the seat of the Government of India from Calcutta to Delhi served as a further impetus to the conservation of its ancient monuments. They were naturally treated as integral and important features of the lay-out of the new capital city, and various schemes were drawn up for beautifying them and their surroundings. Only a few of them are noticed here. The Kotla Firoz Shah, built by Firoz Shah Tughlaq as a citadel to his city of

Firozabad, has been cleared. The site has been excavated and laid out with green swards and copses, while the ruined structures contained in it have been preserved. Similar treatment has been extended to the Purana Qila, or the Old Fort of Humayun, which has been swept bare of the squalid villages. The splendid mosque of Sher Shah and the pavilion known after him as Sher Mandal, which stand inside the fort, have been conserved. The tombs of Humayun and Isa Khan have received due attention, and they have been thoroughly restored. A suitable approach has been provided to them through Bu Halima's garden, which has been cleared. Humayun's tomb is the first specimen in India of a garden tomb, the style being subsequently adopted for the mausolea of many Mughal emperors and nobles. The tomb itself was well cared for, but the garden was a wilderness. This has been reclaimed with its ancient paths, channels and tanks. The group of Lodi tombs in the area now occupied by the Lady Willingdon Park have been overhauled and repaired, while the tomb of Safdarjang with its garden is maintained in good order. The ruins of the college of Firoz Shah Tughlaq and his tomb at Hauz Khas have been repaired, and the site has been laid out with grass lawns and shrubs. The Begampuri Masjid, the Khirki Masjid, Moth-ki-Masjid and the Kali Masjid at Nizamuddin have been cleared and restored to their original condition. The Bijai Mandal, which was the palace of Muhammad Shah Tughlaq, has been effectively conserved, and excavations carried out in its neighbourhood have revealed the remains of the Qasr-i-Hazar Satun (hall of one thousand pillars), which is said to have been erected by that emperor. Other buildings, such as the walls of the Tughlaqabad fortress, Tughlaq's tomb, Sultan Ghari's tomb at Malikpur Kohi, Jahaz Mahal at Mehrauli, Chausath Khamba and Atgah's tomb at Nizamuddin, Khair-ul-Manazil Mosque and Lal Darwaza near Purana Qila, and Shah

Alam's mosque and a bridge at Wazirabad, have also been repaired.

Agra.—On his accession to the throne in 1556 Akbar made Agra his capital, and it retained that distinction until 1640, when Shah Jahan transferred the seat of Government to Delhi. The monuments at Agra and Fatehpur Sikri, which lies some twenty-three miles from it, comprise the best specimens of the Mughal architecture, which reached its highest perfection during the reign of Shah Jahan. The buildings to be found here belong to the time of Akbar, Jahangir and Shah Jahan, including the renowned Taj Mahal, which is famous throughout the world for its grace and beauty. Happily these relics escaped destruction during the period of unrest that followed the downfall of the Mughal empire or in the early days of the British occupation, and, unlike other monuments in the country, they were fortunate in securing careful attention from the Provincial Government. Conservation began as early as 1807, and substantial grants were made from time to time by the Government; but there was no systematic maintenance, and consequently an atmosphere of neglect seemed to pervade them. Matters have been changed since the reconstitution of the Archæological Department in 1902. The buildings are carefully treated and kept neat and tidy. It is needless to say that the most important monument at Agra is the Taj Mahal, which has ever been tended with great solicitude. Standing on the right bank of the Jumna, it is embraced by a spacious walled enclosure and flanked by a mosque and another similar structure, called the Jawab, on the west and east respectively. The enclosure laid out as a garden is entered by a magnificent gateway on the south, which is preceded by a forecourt. The latter also is surrounded by a high wall, and has entrance gateways on the south, east and west. The main tomb, together with the raised terrace on which it stands, and the four

minars, one at each of the corners of the terrace, are constructed of marble, while the subsidiary buildings and the enclosure walls are of red sandstone. The latter has a tendency to be readily affected by the atmosphere. Extensive repairs have been made. The fractured marble facing of the main tomb has been renewed, and the inlay decoration, which forms the most interesting feature of the Taj, has been restored. Due attention has been paid to the garden, where paved pathways, water tanks, channels and fountains have been repaired. Heavy and big trees have been gradually cut and pruned to bring into view from the main entrance the whole group of buildings, and the open plots of ground have been converted into green lawns interspersed with beds of flowers. The neighbouring buildings have been overhauled, and their proper maintenance has improved the surroundings of this famous monument, enhancing its charm and beauty.

After its capture by the British, the Agra Fort was occupied by the military, who used the Diwan-i-Am as an arsenal, Akbari Mahal as a prison, and Salimgarh as a soldiers' canteen. The Jahangiri Mahal, the most ornate palace in the fort, was the first to receive attention. Here there has been a complete restoration, including the rebuilding of the fallen river façade, together with the kiosks and chhattris on the upper storey. The hideous rows of casements at the quadrangle of the Diwan-i-Am have been removed and the cloisters repaired: the archways of Salimgarh, which were bricked up, have been opened. Most of the Akbari Mahal had vanished before the advent of the British, and the removal of débris, averaging three feet in depth all over its site, disclosed the remains of a paved courtyard and of the suite of compartments surrounding it, in addition to the range of chambers which crown the river face of the fort wall. The Anguri Mahal, Machhi Bhawan and Moti Masjid have been restored to their original condition.

The marble tomb of Itimad-ud-Daula, which stands in a walled garden on the bank of the Jumna, is another Agra monument which has been thoroughly restored. It was erected by his daughter, the celebrated Nurjahan, the favourite wife of Jahangir, and is famous for its profuse and excellent inlay ornament. The Chini-ka-Rauza, the Aram Bagh, and several of the pavilions which form such prominent and picturesque features on the bank of the Jumna beside Itimad-ud-Daula's tomb have been disencumbered of modern accretions and conserved.

At Sikandra the tomb of Akbar the Great, an enormous building five storeys high and occupying the centre of a spacious walled enclosure, has been maintained in repair. Its main entrance with four corner minars of marble and the false gate in the centre of the east wall were crumbling to decay, but have been effectively rebuilt. The old fresco painting that embellished the porch of the tomb chamber has been exposed to view, and a small portion of it restored to give an idea of its original richness and design. The garden enclosure, which had become a wilderness, has been relaid with fruit trees and green lawns and shrubs, and a permanent supply of water for irrigation arranged. The barren ground to the south of the enclosure has been also converted into a garden to provide a suitable approach to the monument. The Kanch Mahal and the tomb of Maryam, the wife of Akbar, which also lie at Sikandra, have been overhauled and conserved. The latter was acquired by Government; it had been in possession of the Church Missionary Society, which had been using it as a printing press and carpet factory.

Fatehpur Sikri.—The most important of the monuments which attract visitors to Fatehpur Sikri, some twenty-three miles from Agra, are situated on a ridge in the centre of the ancient city of Akbar, founded about the year 1570. The latter was surrounded by a

battlemented wall fortified with bastions and pierced by eight gateways. It was completely abandoned as a royal seat in less than thirty years without any other appreciable reason, except the lack of good water. On the ridge is a varied group of imperial buildings, which include darbar halls, public offices, royal palaces, baths, stables, waterworks, etc. Adjacent to them stands the magnificent shrine of the Saint Shaikh Salim Chishti, through whose benedictions the Emperor Akbar was blessed with his son and successor Jahangir. Like many ancient monuments in India, they had been utilized for residential purposes. A systematic campaign of conservation was undertaken to rescue them from modern excrescences. Many of them have been reconstructed by reassembling their dislodged members and others extensively repaired or preserved from further dilapidation, while the remains of the badly ruined ones have been disclosed and secured against entire disappearance. Approach roads have been provided for the convenience of visitors. The city wall and the gateways have also come in for attention. The former was constructed of rubble in mud crowned with a coping which was treated with concrete in lime. Small lengths of the wall flanking the gateways have been conserved with the gateways themselves, while a few other sections also have been preserved to give an idea of the size of the old deserted city.

Jaunpur.—Another group of Muslim monuments in the United Provinces is that at Jaunpur, which was the capital of the Sharqi Kingdom. Jaunpur, founded by Firoz Shah Tughlaq in the year 1360, was attached to the Delhi empire until Khwaja Jahan, its governor, threw off his allegiance in 1394 and established an independent monarchy. Unfortunately many of its finest monuments were ruthlessly destroyed or mutilated by Sikandar Shah Lodi about the year 1476, when he conquered Jaunpur, and of the early monuments of the fourteenth century only the Fort and the Atala Masjid

have survived. Other important relics of Jaunpur include a few mosques of the Sharqi period and a bridge built during the reign of the Emperor Akbar. The walls and gateways of the fort, together with a mosque and a few other buildings, have been preserved. Jaunpur, however, is famous for its mosques: the Atala Masjid, the Jami Masjid and the Lal Darwaza Masjid. In each case the richly carved propylon screen, forming the eastern façade of the prayer chamber, gives a distinctive character to the Jaunpur style. Having been in religious use, they had suffered many disfigurements which necessitated structural repairs, including the difficult task of removing whitewash from the carved stonework of the Atala Masjid. The exposure of the exquisite carving and colour scheme, so admirably carried out by the selection of different shades of stones for the respective architectural features, has revived its former glory. The two other mosques, *viz.*, the Jhanjhri Masjid and the Char Ungli Masjid, which are comparatively insignificant structures, have been rescued from destruction by suitable preservative measures. The Akbari Bridge is one of the few examples of that class of architecture of the Muslim period, and although a public road runs over it, it is maintained as an ancient monument. It was badly damaged by earthquake in the year 1934, when seven of its fifteen arches were shattered. These have been rebuilt and the whole bridge has been effectively conserved.

Allahabad and Lucknow.—At Allahabad the Zanana palace inside the fort has been rescued from misuse as an arsenal and restored. The Mughal tombs at Khusro Bagh with the gateway of the garden have been repaired. At Lucknow the Imambaras, tombs and houses of the Nawabs of Oudh, though of a debased modern Indo-Moslem architecture with indications of European influence, are preserved for their historical interest. The most important of the Lucknow monuments is the Imambara of Asaf-ud-Daula, an enormous struc-

ture with huge vaulted roofs, which have had to be repaired recently. Some of these buildings have been permitted to be used as public offices, on condition that their architectural features are not disturbed.

Lahore.—The richest centres of Muslim monuments in the Punjab are Lahore and Multan. The former was a Mughal capital, and all its monuments belong to that period. Its buildings suffered terribly at the hands of the Sikhs, who demolished many of them to use the material in their own structures. Under the British the ancient monuments in the Punjab were long neglected, until the Archæological Department on its reconstitution undertook their conservation. Owing to continuous military occupation of the Lahore Fort by the Sikhs and the British many of its palaces had vanished and others were entirely transformed. A start was made on the conservation of the more important buildings, *viz.*, the Diwan-i-Am, the Chhoti Khwabgah, the Shish Mahal and the Moti Masjid, but subsequently the evacuation of the Fort in the year 1927 made possible a complete overhaul. Modern bungalows and barracks have been demolished, and excavations have revealed the remains of many ancient edifices. At the back of the Diwan-i-Am, a tank and causeways indicating the existence of a garden have been disclosed and restored. The Bari Khwabgah and the colonnades surrounding the garden have been repaired. The garden of the Chhoti Khwabgah and the ruined buildings to its west and south, including the Hammam, have also received attention. The area in front of the Diwan-i-Am has been cleared and laid out with lawns and shrubs, the former indicating the open court and the latter the perished cloisters that once surrounded it.

The Hazuri Bagh in front of the Lahore Fort has been reconstructed in accordance with its original plan, and the adjacent Badshahi Mosque has been repaired. The monuments at Shahdara,

including Jahangir's mausoleum and the serai of Akbar's time, the tomb of Asaf Khan (father of Mumtaz Mahal, the lady of the Taj), and the tomb of Nurjahan have been conserved. The well-known Shalimar Garden with its pavilions, water channels, tanks and fountains has been carefully maintained.

Multan.—Although Multan was early occupied by the Muslims, the surviving monuments date back only to the Tughlaq period, and include chiefly tombs of saints. These shrines have been privately maintained owing to their sanctity, but they have suffered from renovations. The distinctive encaustic tile ornament, being perishable, has been much renewed. The most important local monuments are the tombs of Shah Baha-ul-Haq, his grandson Shah Rukn-i-Alam and Shams Tabriz. The first two are majestic edifices with high hemispherical domes and massive walls in Tughlaq style. The tomb of Shans-i-Tabriz (a local saint, not the famous one of Persia) was rebuilt in 1780. Among the other monuments which have been preserved are the shrines of Mai Pak-damanan, Yusuf Gardezi and the martyr Shadna Shahid (*d.* 1270), whose tomb retains its original features.

Ajmer.—The conservation work comprises the preservation of the Arhai-din-ka-Jhompra Mosque, the restoration of the marble pavilions and the embankment at the Anasagar Lake and the repairs to the royal palace in the old fort inside the city. The Arhai-din-ka-Jhompra is almost contemporary with the Quwwat-ul-Islam Mosque of Delhi, and is the finest specimen of the early Muslim mosques. The first recorded protective work on the mosque was carried out by Daulat Rao Sindia. On the other hand, when Lord Mayo held a darbar at Ajmer in 1870 and heard that the triumphal arch erected for the occasion was composed of stone columns brought from the mosque, he ordered them to be returned; and the beautiful saracenic screen was likewise repaired. The

building was, however, again neglected, and again rescued and restored. The clearance of the courtyard has yielded many sculptures and carved stones, which were undoubtedly buried by the Muslims.

The embankment of the Anasagar dates from the days of the Chauhān rulers, but it was improved by Shah Jahan with a marble parapet and five pavilions and a bathhouse, all of marble. On the British occupation in 1818 it was selected as a site for the dwelling-houses of the officers and the public offices. In 1899, however, these offices were abandoned, and subsequently the modern buildings were removed and the stately embankment and pavilions were restored.

The fort is situated in the centre of the town. Its neighbourhood has been much built over, and many new additions were made to it during the British military occupation, when it was used as an arsenal, so that its original features are greatly obscured and marred. The gateway and the central building, known as the Tahsil, have been conserved, and the latter now houses the Rajputana Museum.

Gaur and Pandua.—Bengal was conquered by the Muslims about the end of the twelfth century under Bakhtiyar Khalji, and it formed a province of the central empire of Delhi with Lakhnauti (Gaur) as capital. In 1338 it assumed independence, but was reconquered in 1576 by the Emperor Akbar. About the year 1350 Shams-ud-Din Ilyas Shah transferred the capital to Pandua, but after nearly seventy years Gaur again became the capital. The principal monuments in Bengal belong to the period of its independence, and their richest centres are Gaur and Pandua; though interesting buildings are to be found elsewhere, for instance at Tribeni and Chhota Pandua in the Hoogli district and Bagerhat in the district of Khulna. The Muslim architecture in Bengal developed a distinctive character, marked especially by the distinc-

tive curvilinear roof, known as the Bengali dome, and profuse mural ornament of carved bricks and tiles. The moist climate proved destructive to its ancient buildings, which also suffered from wholesale pilfering of the glazed tiles and facing stones during the time of the East India Company. Conservation work has therefore mostly aimed at protecting the important edifices. The Adina Masjid at Pandua, which is the biggest mosque in the province, has been reclaimed and repaired. The Eklakhi Mausoleum and the Qutb Shahi Masjid in the same locality have also received attention.

Gaur contains memorials of several Sultans of Bengal. The most important are the Dakhil Darwaza and the Firoz Minar. The former, which represents one of the finest examples of Bengal architecture, has been rescued from a state of dangerous disrepair. The Firoz Minar, apparently a tower of victory, originally consisted of five storeys and a high masonry plinth. Most of the building has been conserved, but the plinth and the topmost storey could not be restored. The Baradwari mosque or the Bara Sona Masjid was irreparably damaged, and only the front corridor with eleven domes remain. The eastern façade and the south wall of the mosque together with the eastern gate leading to the courtyard have been repaired, partly with the original facing stones recovered from neighbouring villages. The Chhota Sona Masjid, the Tantipara Masjid and the Lattan Masjid have also received attention, while measures have been adopted to preserve other buildings in the deserted capital.

Tribeni, Chhota Pandua and Bagerhat.—The tomb and mosque of Zafar Khan Ghazi at Tribeni, which are the oldest Muslim buildings in Bengal, are maintained, and repairs have been effected to the five-storeyed minar (evidently an imitation of the Qutb Minar at Delhi) and its neighbouring mosque at Chhota Pandua. Of the great mosque's original sixty-three domes only twenty-seven now

survive. The tomb of Khanjahan Ali and the Sathgumbaz (sixty-domed) mosque at Bagerhat have been saved from further dilapidation.

Sasaram.—In Bihar only at Sasaram, District Shahabad, are notable Muslim monuments to be found. They belong to the period of the Suri kings and early Mughal emperors. The ancient fort of Rohtas, once occupied by Sher Shah, has been maintained in repair with the Mughal palaces which it contains. The most striking monument in the locality is the mausoleum of Sher Shah, which is a massive domed structure standing in the centre of a tank. It has been effectively conserved, together with the tomb of his father, Hasan Khan Sur, and that of Alawal Khan. The mosque and tomb of Habash Khan and the Jami Masjid have also received attention. At Chainpur in Buxar Sub-Division in the same district the tomb of Bakhtiyar Khan, which is also assigned to the Suri time, was saved by clearing it of trees and vegetation.

Burhanpur.—The Central Provinces and Berar are poor in Muslim monuments, but such as possess historical or architectural interest have received attention. In particular, care has been taken to save the tombs of Adil Shah, Nadir Shah and Shah Nawaz Khan and the ruined palaces in the fort at Burhanpur, the capital of the Faruqi kings of Khandesh.

ZAFAR HASAN.

(*c*) ISLAMIC MONUMENTS

(ii) WESTERN INDIA

In Western India the earliest instance of conservation of an ancient monument of archæological interest by official agency was as far back as 1848. In that year Sir Bartle Frere, then Resident at Satara, caused some essential repairs to be executed to the three

most important Adil Shahi buildings of the sixteenth-seventeenth centuries at Bijapur. Again in 1855 the same officer, then Commissioner in Sind, provided preservative treatment to the fifteenth-century tombs of the Samma and Tarkhan Kings and to the seventeenth-century Jami Masjid of Shah Jahan at Tatta. Sir Bartle, when Governor of Bombay, sanctioned repairs to a few outstanding structures at Bijapur in 1863. Four years later the Government of India had a few tombs and mosques of the fifteenth-sixteenth centuries at Ahmadabad and Sarkhej repaired. These monuments again came under conservation treatment in 1869, this time at the instance of the Local Government. These instances did not arise from any sustained policy of the Government, but were the result of the personal interest of individual officers.

Taken together as belonging to that part of western India which extends in a line from the northern boundaries of Sind to the southern limit of the Konkan coastline, the 738 monuments now being preserved by the Western Circle of the Archæological Survey of India constitute a range singularly remarkable for the vast variety of its architectural types.

The vitality and prosperity of Hindu architectural activity, which had continuously manifested itself in a variety of fascinating structures in different parts of western India between the seventh and the thirteenth centuries, has been described in Section (*b*) of this chapter. This activity suffered an abrupt check from the incursions of the Muslims in these parts which began in 1294, when Ala-ud-Din Khalji as a prince suddenly fell upon Devagiri (present Daulatabad), the capital of the Yadava rulers of Maharashtra. These incursions continued till at the time of Muhammad Tughlaq's accession at Delhi in 1325 almost every part of India south of the Vindhyas had a Muslim Governor responsible to Delhi. Muhammad Tughlaq by his relentless ways of government alienated the loyalty

of most of these Governors, who one by one broke loose from the Delhi Empire by establishing their own independence over the areas in their charge.

Gujarat.—Each dynasty as it settled down created an intensive vogue of expressing its religious zeal and æsthetic tastes by the building of mosques, mausolea, palaces and pleasure gardens, forts and fortifications. In Gujarat, places like Ahmadabad, Champaner and Broach, and, in the south, Bijapur, Ahmadnagar and Khandesh soon became the principal centres, where the new movement gave birth to a variety of magnificent forms in the Islamic architecture of Western India.

The style evolved for Islamic buildings in Gujarat is the product of the impact of two equally vital traditions, namely, those of the indigenous mediæval Hindu architecture which had a brilliant record already to its credit, and of that which had already created the Qutb Minar, the Masjid-i-Quwwat-ul-Islam and the Jama'at Khana Masjid at Nizamuddin in Delhi. While sufficient local talent capable of great achievements in architectural forms had been inherited in Gujarat itself by the Musalmans, they had also brought with them their builders trained in the school of the so-called early Pathan architecture of Delhi. These latter alone were able to give the Muslim designs of Gujarat buildings a breadth and spaciousness which were wanting in the otherwise magnificent Hindu fabrics of this area. The result is that of all the styles of buildings which developed under Muslim auspices in India, the most elegant, and withal the most characteristic, is the one associated with the buildings of the Muslim Kings of Gujarat. Fully one hundred examples of this particular style in mosques, tombs, tanks, palaces, gardens, city walls and gates are now being kept in a fit state of repair, all over the British administered parts of Gujarat. The largest number of buildings is at Ahmadabad and its

immediate suburbs and at Champaner, the two places that once simultaneously served as the capitals of the Ahmad Shahi Kings of Gujarat during the fifteenth and sixteenth centuries.

The Jami Masjid at Ahmadabad, with a prayer chamber 210 feet wide by 90 feet deep and 260 graceful columns with a vast open court extending before it, is one of the most elegant structures in the world. "Rani-ka-Hujra," or "Tombs of the Queens," adjoining the Jami Masjid on the east, Rani Sipri's Mosque and tomb, Haibat Khan's Mosque, Muhafiz Khan's Mosque, the Tin Darwaza or Triple Gateway and Siddi Sayyid's Mosque are some other buildings in the city of Ahmadabad remarkable for the excellence of taste and force of originality evident in their plans and details. The stone tracery windows in the small mosque of Siddi Sayyid are an unrivalled example of decorative architectural screen work. Equally beautiful and impressive are the monuments of the same period at Sarkhej, once the royal retreat of Gujarat Kings, five miles from Ahmadabad, and also of Champaner, seventy-two miles south-east of Ahmadabad, which the famous Mahmud Begarha (1459-1511), the third King of the Ahmad Shahi line, renamed Muhammadabad in 1484 to serve as the political capital of his kingdom. The tomb of Shaikh Ahmad Khattri Ganj Bakhsh at Sarkhej, built between 1445 and 1451, is remarkable for the beauty of the perforated brass screens which enclose the tomb chamber and for the grace of stone tracery windows which adorn not only the exterior of the walls but also the dome above—a not uncommon device for letting in light into the interior of the building.

The Jami Masjid at Champaner, measuring 169 feet by 81 feet, with eleven large domes on its roof and exquisitely carved ceilings and balconies, ranks among the finest mosques in Gujarat.

Bijapur.—An important group of Islamic monuments, a century later in date than those of Gujarat, is situated at Bijapur, the capital

of the Adil Shahi dynasty, which rose on the fall of the Bahmani Kingdom of Gulbarga in 1489. This dynasty ruled a vast area now comprised in the districts of Sholapur, Bijapur, Dharwar and Belgaum, and parts of adjoining territory for well-nigh two hundred years from 1489 to 1686 A.D. Its kings have left amazing proof of their zeal, almost amounting to passion, for architectural edifices of every variety and purpose at Bijapur and its suburbs, where 109 buildings of that period, comprising mosques, tombs, pavilions, pleasure retreats, palaces and reservoirs, are now receiving constant conservation treatment under statutory protection. In style the Islamic remains at Bijapur show very much less influence of indigenous traditions of the builder's craft than is discernible in the monuments of Ahmadabad. The feature in these Bijapur edifices that at once announces their exotic inspiration is the dome. Unlike the domes of Ahmadabad, the Bijapur dome rises abruptly from the general floor level to a height greater than its diameter, so that the interior is lost in its own gloom. In contrast with domes of this weird formation, the minarets at Bijapur are gracefully slender and tall. They, however, lack that internal arrangement for spiral staircases which is characteristic of the minar at Ahmadabad. Another peculiarity of Bijapur craft is seen in the arch. The usual Bijapur arch is two-centred, its curves rising to meet one another so as to form a tangent at the crown.

The only Islamic building of pre-Adil Shahi times at Bijapur, and therefore unlike the style that has come to be associated with the monuments of that dynasty, is the Mosque of Malik Karim-ud-Din, erected in 1320. Karim-ud-Din was either a son or brother of Malik Kafur, the famous General of Ala-ud-Din Khalji. Built on the site of a group of old Hindu temples, every inch of this mosque is made up of the materials taken from those temples. It is perhaps more correct to say that the mosque is a living example of an

ancient temple converted and adapted *en bloc* to serve as a Muslim house of prayer. It will be enough perhaps to cast a rapid glance at only a few of the more important Adil Shahi monuments such as the Jami Masjid, Ibrahim Rauza, Gol Gumbaz and Mehtar Mahal, to form some idea of the general characteristics of the style they represent.

The Jami Masjid is the largest of its class in the Deccan, covering a total area of 116,000 square feet, of which the terraced portion occupies 91,000 and the open court the rest. Unlike most other mosques at Bijapur, it has bulbous domes, and its open court is enclosed for the most part with side arcades. Otherwise severely plain, the mihrāb contains marvellous gilt decoration, representing tombs, minarets, censers, chains, vases, flowers. Thereon are also many inscribed medallions, from one of which we learn that Muhammad Adil Shah (1626-1656), the seventh King of the Adil Shahi Line, had ordered the making of this ornament in 1636, although the building had been begun and almost completed by Ali Adil Shah I (1557-1580). Aurangzeb, after his occupation of Bijapur in 1686, used to offer his prayers in this mosque, and made some additions to it.

Ibrahim Rauza, comprising in a walled enclosure two buildings on high platforms, one a mausoleum, and the other a mosque, facing one another across a tank, was built by Taj Sultana, the wife of Ibrahim Adil Shah II (1580-1626), to serve in due time as her own tomb; but the King, who pre-deceased his wife, was first buried in it, and so it came to be known after his name. This monument marks the zenith of exquisite refinement ever reached in the decorative schemes and details employed on Adil Shahi buildings. The mausoleum, which is on the east, contains the tombs of the Queen Taj Sultana, Ibrahim Adil Shah II, his mother, his daughter Zohra and his two sons. The mosque opposite has the usual arrangement

of a domed and terraced hall or prayer chamber and an open court outside. Both the structures are noted for their deep rich cornices, graceful solid minarets, exquisite stucco mouldings of floral and ornamental patterns and large-size Arabic letters cut out in clear relief to reproduce lengthy Quranic texts in vertical and horizontal bands that adorn their walls, doors and windows. A remarkable achievement of the architect at this monument is reflected in the ceiling of the mausoleum, the span of which equals the entire breadth of the chamber beneath. This is nothing but a hanging ceiling, above which rests another room beneath the dome. A building of such dainty decoration and design has naturally needed unusual care to preserve it in as sound a condition as its artistic merits deserve.

In striking contrast with the consummate refinement and delicacy of Ibrahim Rauza described above stands the Gol Gumbaz, the most massive structure of masonry in the Deccan, which was built in his lifetime by Muhammad Adil Shah (1626-1656), the son and successor of the builder of Ibrahim Rauza, to serve as the crowning glory of his tomb chamber. The floor area of the hall of this Gol Gumbaz is the greatest unbroken space of any single-domed apartment in the world. While the whole structure rests on virgin rock, the dome itself has no cantering arrangement to support it, but derives its stability from a series of pendentives and squinches which curve up from the four top corners of the vast chamber. The outside diameter of the dome is 144 feet, that of its interior 124½ feet, while its height from the floor of the terrace is 198½ feet exclusive of the shaft at the top, which is another 8 feet. The immense chamber below has a floor area of 18,337 square feet, and the distance between this floor and the apex of the dome is 178 feet. At a height of 109 feet from the floor a gallery hanging out 11 feet from the walls runs all round the base of the dome. This gallery, because

of its re-echoing qualities, has added immensely to the importance and popularity of the monument. Here even the faintest whisper is re-echoed from one end to the other, while a loud sound is answered many times over with equal force and clearness. The high platform in the centre of the chamber floor supports the tombstones of six graves which lie beneath in the vault. The wooden canopy on this platform indicates beneath it the tomb of the King, while other tombs in the group belong to his two wives, his mistress (the famous Sinhalese Rambha), his daughter and his grandson.

In general appearance the building below the dome is a cube of immense dimensions, each of its four corners running up like octagonal towers surmounted by a dome of proportionate size. A stone cornice supported on imposing brackets once fringed the top of the walls on all four sides. Because of their relatively meagre proportions the numerous windows and doorways in this monument appear insignificant in the vast expanse of the wall area in which they open.

This colossal structure of rare characteristics, widely known as Gol Gumbaz, was re-furnished with the whole of its missing cornice over its front face some twenty years ago in exact imitation of its original features, while only lately the whole outer surface of its vast dome, which had begun to show signs of decay, has been completely renovated by means of cement spraying. Other monuments worthy of note at Bijapur are the Mehtar Mahal, remarkable for the exquisite carving of the brackets and balconies of its windows and the slender conical shape of its minarets; Taj Bavdi (Baoli), a great reservoir made greater by the splendid architectural setting provided by a long arched corridor on either side of its main entrance and by the flights of steps descending to the level of the water from open platforms on two of its sides; and the unfinished

arcade of Gothic arches which the eighth Adil Shahi King, Ali II (1656-1672), had erected in connection with the building of a mausoleum for his own mortal remains. This last monument was not finished; but from the gigantic arches on which it was to rise, it is not difficult to conjecture that it was planned to outdo the massive majesty of the Gol Gumbaz.

The two other places in western India where Islamic monuments of some worth survive are Ahmadnagar in the Deccan proper and Tatta in Sind.

Ahmadnagar.—Ahmadnagar, as its name implies, was founded in 1494 A.D. by Ahmad Nizam Shah, who from the position of Bahmani Governor of Junnar had raised himself to independent kingship of that province in 1490. The dynasty is known as Nizam Shahi, after the name of Nizam-ul-Mulk Bahri, the father of Ahmad and Minister of the Bahmani King, after the death of Mahmud Gawan. From the contemporary accounts of local historians and foreign travellers, Ahmadnagar under the Nizam Shahi Kings would seem to have been a city rivalling the splendour of Cairo and Bagdad. These accounts find some corroboration from the vast number and variety of architectural remains which have survived in the shape mostly of mosques and tombs and to a lesser extent in the form of palaces and gardens. Of these monuments thirteen typical examples are, by reason of their historical importance, being preserved at state expense.

A striking feature of many monuments at Ahmadnagar, not so much in evidence in other Islamic monuments of the Deccan or Gujarat, is the octagonal and double-storied arrangements of their plans. The material commonly used is the local trap of dark rough colour set in mortar, stucco lime plaster supplying the surface covering. Except for the frequency of the double-storey plan, the monuments of Ahmadnagar have no definite style of their own.

The more important of the Nizam Shahi remains are the mausoleum of Ahmad Nizam Shah (1490-1508), the founder of the dynasty; Farah Bagh (garden); Salabat Khan's tomb; the palace of Nimat Khan and the tomb and mosque of Rumi Khan, the maker of the famous Malik-i-Maidan gun, still extant at Bijapur.

Ahmad Nizam Shah's mausoleum lies in Bagh Rauza, or the Garden of the Shrine, about half a mile north-west of the city. Built of black Deccan trap, the building, forty feet square and domed at the top, contains beside that of the king, which is in the centre, the tombs of several other members of the royal family. The walls inside are inscribed with texts from the Quran in Arabic calligraphy of high artistic value finished in letters of gold. Close by to the left of the mausoleum is an interesting masonry plinth supporting a stone canopy on beautifully carved pillars, also of stone. This canopy marks the burial place of the elephant which helped to capture Rama Raja, the last King of Vijayanagar, at the battle of Talikota in 1565. Adjoining the canopy on the same platform is the tomb of the driver who rode this elephant in that battle.

Farah Bagh, or the Garden of Delight, has under archæological care during the last fifteen years recovered some slight semblance of the original plan of its premises and precincts. Situated about two miles south-east of the city, this building was first begun in the reign of Burhan Nizam Shah (1508-1553), the second King of Ahmadnagar. When first completed, its royal master did not like it; and it was therefore pulled down and started anew, being finally completed in 1583, thirty years after the death of Burhan. Wrought in rough stone and lime masonry, plastered all over with stucco, this palace of octagonal plan stands out in the midst of what was once a small lake; its second storey, now partially in ruins, is shorn of its dome, which is said to have been thirty feet high. The lake is now dry, nor are there any traces of the garden which once

fringed the lake save a few clusters of tamarind and mango trees, which fail to furnish the original setting of this monument.

The unfinished tomb of Salabat Khan II, the celebrated Wazir of the fourth Ahmadnagar King Murtaza Nizam Shah (1565-1588), on the Shah Dongar Hill, six miles east of Ahmadnagar, is locally though erroneously known as Chand Bibi's Mahal. Left incomplete at the top in its original construction, and long exposed to the ravages of weather and decay, this monument, through the repairs and care bestowed upon it in recent times, still supplies a marked feature of interest to the landscape around. This building was erected by Salabat Khan in his lifetime, and its unfinished state may be due to the builder's early death.

Octagonal in plan, the sepulchre is raised on a stone terrace twelve feet high and a hundred yards wide. The two tombs in it—one of Salabat Khan and the other of one of his wives—are covered by a dome supported on three piers of elegant pointed arches. On its octagonal plan the monument rises like a tower from a twelve-foot wide base to a height of seventy feet, and there projects from its interior face a continuous gallery twelve feet broad all round. Access to the gallery is provided by a narrow staircase which is hidden in the wall. Though very little of ornament is associated with it, the three architectural features which distinguish this monument—namely, the octagonal platform, the piers of pointed arches and its gallery—entitle it to a place of honour among the Islamic monuments of Ahmadnagar.

Sind.—Before it became a British possession in 1843, Sind had since 711 been ruled by the Muslims. There are, however, today few architectural remains of these eleven centuries of Muslim occupation. It has not been able to offer more than forty-nine monuments of that millennium for archæological preservation. The reason of this lies, perhaps, in the scarcity of stone and in the depth of saltpetre

in its soil, the latter feature destroying brick structures quickly and the former discouraging the erection of stone edifices.

Of the forty-nine monuments which are being preserved, only three represent mosques, three are forts of sorts, one a minar, and all the remaining forty-two stand for tombs or sepulchres, mostly of kings, rarely of a saint or of a religious preceptor. Among the forts included in this number the one deserving particular mention is that at Umarkot in the Thar Parkar district. This, though of little architectural value, is yet historically important as being the spot where Akbar the Great Mughal was born on November 23, 1542.

Seventeen of the monuments are grouped at Tatta, fifty-five miles north of Karachi, five at Hyderabad (Sind), two each at Sukkur, Khudabad and in the Nawabshah district, while others are scattered elsewhere in the province. Tatta was the *de facto* capital of Sind for about three centuries from 1475 to 1737. It was founded during the second half of the fifteenth century by Jam Nindo (Nizam-ud-Din) of the famous Samma dynasty (1351-1517). After the fall of the Sammas their successors the Arghuns (1519-1554) and the Tarkhans (1554-1625) also ruled from this place. When Jahangir annexed this part of Sind to his empire, Tatta continued to be the seat of the Mughal Governors till 1737. As a result of the territorial readjustments resulting from Nadir's invasion of India, the province of Tatta passed under the control of the Kalhora Chief, Khudayar Khan, who was then ruling a large part of Sind from his capital at Khudabad, four miles south of the present town of Dadu. With this last change in its political destiny, Tatta began to decline in importance.

Here at Tatta lie the royal cemeteries of three dynasties—namely, the Samma, the Arghun and the Tarkhan—beside a number of sepulchres and memorials containing the tombs or graves of some Mughal governors whom fate did not permit to return to Delhi.

These cemeteries are thickly spread over different parts of the table-land of Makli Hill, which skirts the town of Tatta on one side. This hill, with the domes and high terraces of the more pretentious mausolea and sepulchres shooting up in lonely grandeur amidst a vast mass of earth cairns and wild jungle, presents an imposing scene of desolation.

In the building of structures of respectable size and status at Makli brick was used more than stone. Those of brick in every case rise on foundations and plinths of stone to prevent their decay through the ravages of saltpetre. In general plan these buildings are either octagonal or cubical, and all have a globular dome of some size. Architecturally there is nothing of special note. The surface decoration, however, attracts notice by the profuse exuberance of glazed tile-work and stone tracery ornament with which walls, floors, ceiling and domes have been covered. In no other part of India has glazed tile been so abundantly, withal so exquisitely employed on buildings as here in Sind; and this is obviously due to the natural influence of its neighbour Iran.

It will suffice here just to glance at some striking features of the more important buildings at Tatta. One of the earliest, the mausoleum of Jam Nizam-ud-Din (Nindo), the founder of Tatta, is conspicuous on account of the absence of a dome and the unmistakable affinities which its pillars, parapet walling, balconies and the buttressed niche in the west wall bear to the technique and tone of similar members found in the buildings of Gujarat. This affinity is not less marked in the delicate refinement and exquisite floral patterns and decorative motifs of carved stone surface that make the building worth preserving. As against the Gujarat elements discernible at Jam Nindo's tomb, the mausoleum of the younger Mirza Isa Tarkhan, who died in 1644, betrays in its carved stonework a clear reflex of the style of the decoration which has made the

tomb of Salim Chishti at Fatehpur Sikri so famous in Northern India.

The Jami Masjid in the town of Tatta is another great edifice. It was built by Shah Jahan (1627-1658) as a token of his gratitude to this place for giving him shelter during one of his exiles as a prince in revolt against his father. The mosque follows the usual plan of Mughal Jami Masjids at Delhi and Agra. Its hall, three bays deep, is ninety-eight by forty-eight feet, and the niche in its western centre is distinguished for the superb delicacy of its stone surface carving. The ceiling of the domes and a large proportion of the walls and façades are profusely embellished with coloured tile work of considerable merit. The buildings at Tatta and Makli, being mostly built of brick, require constant watch to keep them intact against the inroads of saltpetre.

At Hyderabad is preserved a group of some monuments of the eighteenth century, the earliest of which is not later than 1768. These are mainly tombs, and relate to the Kings of the Kalhora and Talpur dynasties. The Kalhoras, a tribe of Arab extraction claiming descent from Abbas, the Prophet's uncle, established themselves as the first power in Sind in 1736. One of their kings, Ghulam Shah (1757-1772), founded the city of Hyderabad in 1768, and along with it began the construction of his own sepulchre. His successors did not hold Sind after 1783, when the Talpurs, a Baluch tribe of Arab origin, established themselves as the masters of their country and ruled it till 1844, since when Sind has been a British possession.

These Hyderabad sepulchres, numbering six, stand in a group at the northern end of the ridge on which the city is built. Two of these belong to the Kalhoras and four to the Talpurs. They follow a more or less uniform plan, quadrangular, with a large dome in the centre at the top, and high massive walls showing arched openings on their outer face arranged in double rows one

above the other. The four corners are usually surmounted by square kiosks, each having a dome of proportionate size. Minarets are not a very conspicuous feature of these sepulchres, which are built mostly of brick, plastered over with stucco. The tombs and their parapeted platforms are of marble, carved in beautiful floral and tracery patterns and inscribed with texts from the Quran. The earliest tomb was much damaged by the collapse of the dome, which could not be reconstructed, though other repairs have been effected. These tombs are valuable for showing the architectural tastes of two prominent Muslim dynasties that flourished during the eighteenth and nineteenth centuries in Sind.

As will appear from what has been written above, the singular interest of the Islamic monuments of Western India can be accounted for largely because, both in Gujarat and the Deccan, these buildings were mostly erected by powerful provincial or independent rulers. Their construction was consequently less rigidly directed by the canons of the imperial capital than in the north.

Mandu.—No account of conservation of buildings of the Muslim period would be complete without a mention of Mandu, 'the City of Joy,' the picturesque ancient capital of Malwa. There is a wealth of tanks, palaces and mosques, with which the independent Sultans of Malwa embellished it in the fourteenth and fifteenth centuries. The style is at once chaste and vigorous; nowhere else can the student find such complete examples of civic architecture of the Pathan period. After the city was turned into a ruin with the Mughal conquest of Malwa, the Emperor Jahangir spent large sums on the repairs of the buildings when he occupied them in 1617. Thereafter the splendid ruins were neglected for nearly three centuries before the Dhar Darbar took up the task of their preservation, towards which the Government of India gave special grants-in-aid in 1903 and 1904.

The earliest among the extant remains, the great Jami Masjid and tomb of Hoshang Shah, testify to the simple but dignified taste of that ruler. The former is an imposing structure: the latter is severe in its simplicity but graceful in proportion and restrained in its ornamentation. The Hindola Mahal is another monument restored from decay. The Jahaz Mahal or Ship Palace, a long building surrounded by sheets of water, strikes a festive and luxurious note, departing from the simplicity of the earlier buildings. The complex known as Ashrafi Mahal of Mahmud Khalji includes the remains of a tower of victory and the tomb of that Sultan, which was carefully excavated from the débris. Lastly, mention must be made of Rupmati's pavilion and the palace of Baz Bahadur, the last independent ruler of Mandu, the legends about whose romantic career contribute not a little to the fascination of Mandu.

Q. M. MONEER.

(*d*) SCIENCE AND CONSERVATION

The problem of the decay and ultimate destruction of valuable antiquities in the museums and in the field, on account of atmospheric influences or local conditions, has long been a matter of serious concern to the Indian Archæological Department. It was, therefore, decided to appoint a properly trained chemist for the preservation, on scientific lines, of antiquities in charge of the Department. Accordingly, the writer (formerly a chemist in the Indian Ordnance Department) was selected to undergo the necessary training for this work at the British Museum and University College, London. On his return from England in 1917, he was directed to overhaul the important collection of antiquities housed in the Indian Museum, Calcutta. The methods of preservation

recommended by experts in Europe and America were tried and adopted, with necessary modifications to suit Indian conditions. For instance, the treatment of the enormous number of copper and bronze objects in the Indian collections constituted a difficult task, but an efficient and safe formula (tartaric acid, 1; caustic soda, 1; water, 10) for their cleaning has been evolved, which has facilitated this work considerably. In other cases, also, reliable methods have been worked out so that any object, however decayed and fragile, can be saved in the laboratories by proper methods of preservation.

The work in the Indian Museum, Calcutta, was completed at the close of 1920; but the demand for the services of the Archæological Chemist grew rapidly. Not only in the several museums, but also at the excavations which the Archæological Department had undertaken in various parts of the country, the expert help and advice of the Chemist was considered indispensable. It was found necessary to fit up field laboratories at Mohenjo-Daro, Harappa and Taxila, while assistants were trained to take simple and urgent preservative measures at the excavations. The Central Laboratory was also shifted to Dehra Dun, which was more conveniently situated than Calcutta for the principal sites of exploration.

Objects of great variety and interest have been received for preservative treatment in the laboratories; these comprise metals and alloys, textiles, wood, stucco, stone, pottery, faience, glass, ivory and bone, manuscripts, paintings, etc. Special mention must, however, be made of the successful preservation of thousands of copper and bronze antiquities from Mohenjo-Daro and Harappa, mostly found in a highly corroded state on account of the great salinity of soils at these sites. These objects were found impregnated with cuprous chloride, which is unstable in moist air, and, therefore, gave rise to the troublesome 'bronze disease.' The preservation of the important collection of bronzes discovered at Nalanda is also

noteworthy. The unique collection of Mughal and Persian paintings in the Fort Museum, Delhi, and the Buddhist silk paintings in the Central Asian Antiquities Museum, New Delhi, have undergone careful preservative treatment besides proper mounting. The number of antiquities of various materials which have been treated in the Department's laboratories during the last twenty years of its existence totals nearly 29,000.

In this connection we may also mention the Archæological Chemist's contribution to the important work of the preservation of the famous frescoes at Ajanta by Signor Cecconi, an Italian expert. It was necessary at the outset to understand clearly the technique and nature of the materials employed in these paintings. With this object, analyses were made of the pigments and painting ground. Moreover, the chemical aspects of the methods proposed by Signor Cecconi were carefully examined so that certain materials which were likely to produce injurious effects on the paintings were rejected and safer ones substituted. Volatile and innocuous solvents—*i.e.*, alcohol, turpentine and ammonia—were employed for the elimination of the old paint and smoke. After necessary cleaning, beeswax in turpentine was used as the fixative. Casein and lime cement, or shellac and alcohol, were injected to refix loose plaster. Later on, the Archæological Chemist carried out the preservation of the Bagh frescoes (in Gwalior State).

The weathering or decay of stone monuments has been another serious problem before the Archæological Department. It is beset with considerable practical difficulties on account of the atmospheric conditions prevailing in India, besides the enormous number and size of the structures. The Archæological Chemist has carried out a preliminary survey of several monuments in different parts of the country and has come to the conclusion that in the majority of cases the principal cause of decay is rainwater, which works in con-

junction with oxygen and carbonic acid in the atmosphere. Fortunately, the monuments are usually situated far away from the modern industrial centres; and so the question of the acidity of air due to sulphuric acid generated by the combustion of coal, which is so acute in Europe, does not arise here. The case of the famous temples of Halebid and Belur in Mysore State may be cited. These imposing monuments are built out of a stone locally called 'potstone,' which is an ultra-basic rock of the variety of altered pyroxenites. This stone is considered to be of excellent weathering qualities, but signs of its decay are evident all over the temples. The chemical analyses of the sound and decaying specimens of the stone have revealed that in the process of weathering about 25 per cent. of its constituents have been lost. This is manifestly due to the action of rainwater aided by carbon dioxide and oxygen of the air. A waterproof treatment was recommended.

Similarly there are numerous monuments in Central India built out of sandstones from the Vindhya range, and the Deccan trap rock, which are weathering badly through the agency of meteoric waters. Experiments have been carried out on some of these to render their exposed surface waterproof by treatment with paraffin wax paste, but its beneficial effect has been found to be only short-lived, and it is, therefore, necessary to repeat this treatment at very short intervals. In fact, no satisfactory waterproofing treatment has been found so far. On account of these difficulties the conservation of monuments in India has so far been limited practically to ordinary repairs and engineering measures for their stabilization. The main monuments which have been treated with paraffin wax are the Udayagiri Caves (Gwalior), Asoka inscriptions at Jaugada, Nanaghat inscriptions, the Asoka Column at Lauriya-Araraj, temples at Sibsagar (Assam), the Jain image at Barwani and the Dibbesvara temple at Sarapalli (Vizagapatam district).

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Some of the important monuments in the Deccan, which are executed out of highly crystalline rocks, gneiss and granite, suffer also from extreme variation of temperature. It has, therefore, been found necessary to protect the Asoka inscriptions at Jaugada and Nellakonda by means of suitable sheds in order to guard them against the direct rays of the sun as well as the rains. This plan is obviously impracticable in the case of large temples.

Another important cause of decay of monuments in India is the action of soluble salts—*i.e.*, chlorides, sulphates or nitrates of alkalis and alkaline earths—which may be derived from the soil below. There are several important monuments at Delhi, Agra, Paharpur, Nalanda, Mohenjo-Daro, Harappa, etc., which are being injured through the action of salts derived from the soil. In the coastal regions sea-salts, which are carried by winds, constitute a very serious cause of decay. In fact, the monuments situated within the range of sea-salts comprise some of the best examples of sculptor's art which survive in India. The rock-cut temples of Elephanta and Jogesvari, Black Pagoda at Konarak, Bhuvanesvar temples, Dibbesvara temple at Sarapalli, Seven Pagodas (Madras), and Amaravati sculptures may be mentioned among those being affected by sea-salts. The Archæological Chemist has carried out experiments at Elephanta and has come to the conclusion that the salts can be eliminated satisfactorily by the process of osmosis. In practice, a thick layer of wet-paper pulp is applied to the affected surface and taken off when dry. This treatment is repeated until only nominal amounts of the salts remain behind. Finally, the surface can be rendered fairly impervious to sea-salts by the application of vinyl acetate or wax. As an alternative, washing with plain water has also been recommended.

MOHD. SANA ULLAH.

[*For Illustrations to this Chapter, see Plates XVI to XIX.*]

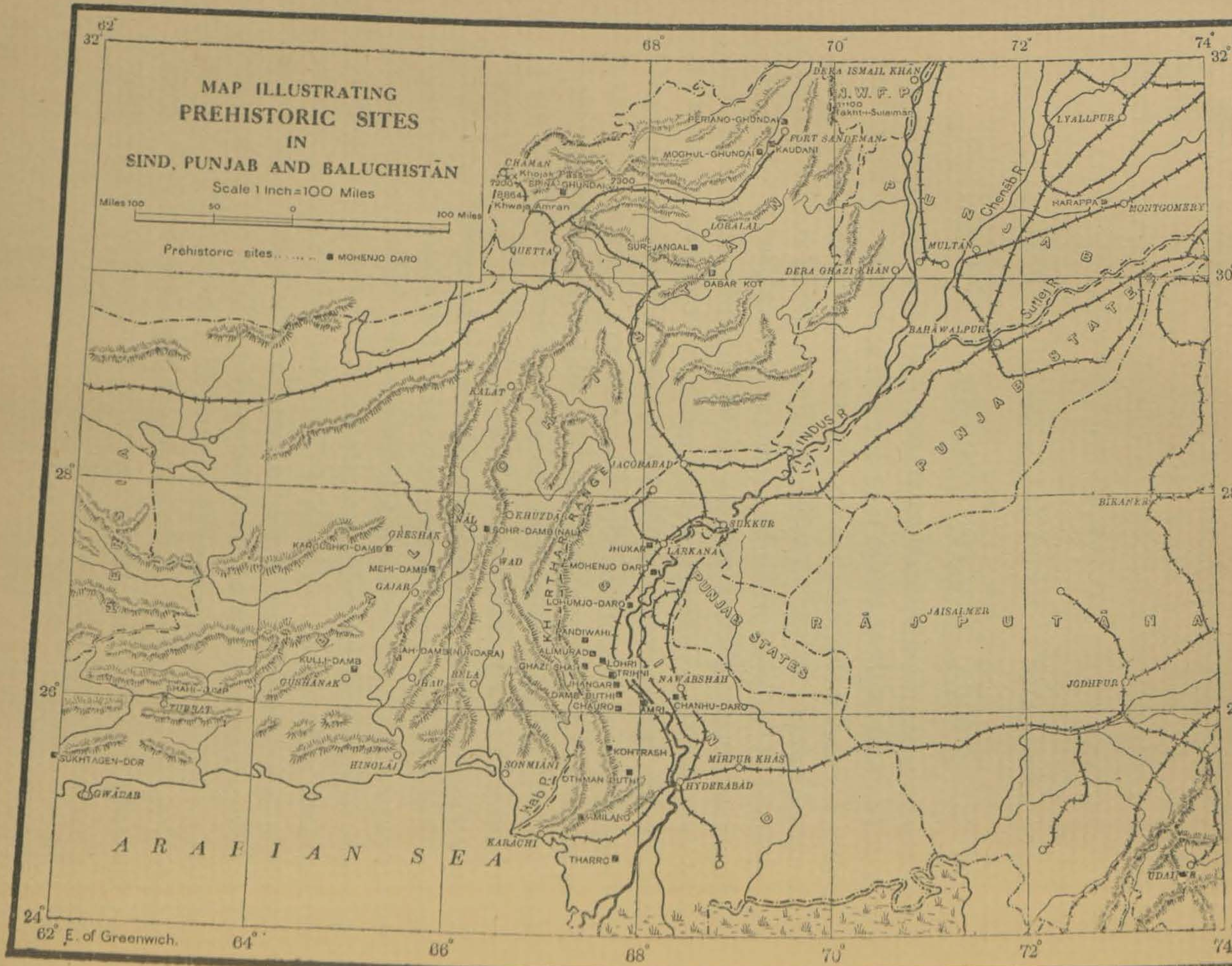
CHAPTER III

EXCAVATION AND EXPLORATION

(*a*) PREHISTORIC AND PROTOHISTORIC CIVILIZATION

The existence of man in India has not yet been traced prior to quaternary or pleistocene times (*i.e.*, Ice Age), though elsewhere he probably made his appearance in the tertiary epoch. The first evidence of human industry is afforded by a class of rudely shaped flints known as 'eoliths,' which are taken as dating back to the dawn of the Stone Age. These artifacts, between which and those produced by Nature it is difficult to distinguish, have not been found in India, though examples of a kindred type are reported from Burma.

During pleistocene times, when the evidence of man's existence is universal, his artifacts mostly consisted of roughly chipped stone implements. This age, known as the palæolithic or Old Stone Age, is divided into Lower, Middle and Upper, the division being based on stratigraphical and typological evidence. The geological law of superposition of layers has been applied to sites where these implements are found, as, for instance, the cave-site of Castillo in Spain, and the sequence of palæolithic cultures in Europe has thus been established. The Lower culture is characterized by Pre-Chellean, Chellean and Acheulean types of implements, the Middle by Mousterian, and the Upper by Aurignacian, Solutrean and Magdalenian. While no such classification of Indian palæolithic implements is yet possible, most of the examples being surface finds, there is no doubt that the implements found in Europe have their typological counterparts in India.


MAP ILLUSTRATING
PREHISTORIC SITES
IN
SIND, PUNJAB AND BALUCHISTĀN
Scale 1 Inch=100 Miles
Miles 100 50 0 100 Miles
Prehistoric sites ■ MOHENJO DARO
ARABIAN SEA
DERA ISMAIL KHAN
N.W.F.P.
PERIANO-GHUNDAI
FORT SANDEMAN
MOGHUL-GHUNDAI
KAUDANI
CHAMAN
Khojak Pass
SPINA GHUNDAI
Khwaja Amran
QUETTA
LORALAI
SUR-JANGAL
DABAR KOT
DERA GHAZI KHAN
MULTAN
Chenab R.
LYALLPUR
HARAPPA
MONTGOMERY
Sutlej R.
BAHAWALPUR
PUNJAB STATES
INDUS R.
KALAT
JACOBABAD
KHUZDAR
SOHR-DAMB (NAL)
NAL
GRESHAK
KAROGSHKI-DAMB
MEHI-DAMB
GAJAR
WAD
KIRTHAR RANGE
SUKKUR
JHUKAR
LARKANA
MOHENJO DARO
LOHUMJO-DARO
PANDIWAHI
ALI MURAD
GHAZI SHAH
LOHRI
TRIHNI
JHANGAR
DAMB BUTHI
CHAURO
AMRI
CHANHU-DARO
NAWABSHAH
KULLI-DAMB
GUSHANAK
JHAU
BELA
SHAHI-TUMP
TURBAT
SUKHTAGEN-DOR
GWADAR
HINGLAJ
SONMIANI
Hab R.
OTHMAN BUTHI
KOHTRASH
MIRPUR KHAS
HYDERABAD
MILANO
KARACHI
THARRO
BIKANER
JAISALMER
RAJPUTANA
JODHPUR
UDAI
62° E. of Greenwich. 64° 66° 68° 70° 72° 74°
32° 30° 28° 26° 24°

Indian palæolithic implements are preponderantly of quartzite, an extremely refractory material compared with flint. The first palæolith was discovered in 1863 by Bruce Foote,[1] and similar implements have since been discovered in many parts of India, the largest number from gravel-beds of rivers and laterite formations of the Coromandel coast. Specimens have also been collected in similar geological situations in the Narbada valley, Bihar, Orissa, Chhota Nagpur and Rajputana, and recently in Bombay (at Khandivli) and the Punjab (in the Soan valley). Among the earlier finds mention may be made of the discoveries in the Kurnool (*e.g.*, Billasurgam),[2] Chingleput (notably Attrampakkam), North Arcot and Cuddapah districts of the Madras Presidency. Two well-known implements are an agate flake found by Wynne in 1865 at Mungi, near Paithan in Hyderabad, and a coup de poing found in 1873 by Hacket at Bhutra in Narsinghpur district. Both artifacts were found, embedded in gravels, in association with fossilized animal remains.

In the absence of stratigraphical evidence the Indian prehistorian must classify his implements typologically and from the data gleaned from a study of the technique employed in tool-making.[3] Bruce Foote has divided Indian palæoliths into ten types, while Coggin Brown[4] prefers to recognize only three. The most important and characteristic type is the *coup de poing*, or hand-axe, some examples of which are pear-shaped and others of the ovate shape. These artifacts, which are core-tools, have been compared to the Chellean and Acheulean types of Europe. The Indian *coups de poing* are fashioned from a nodule of quartzite which is flaked off by striking on both faces until it takes the requisite shape. In some cases the butt end of the tool is left unworked and blunt. The specimens from which large and irregular flakes have been removed, having the unworked butt end, seem to be the earlier, while those

that show more regular edges and are better trimmed and also bear evidence of secondary flaking are naturally to be regarded as later examples. In addition to the core-tools a number of flake-tools were also in use. The flakes were struck off the original cores either by percussion or by pressure.

No systematic study has yet been made of the remains of the Stone Age in India, the only mentionable attempt being that of the Yale-Cambridge North-India expedition led by Professor H. de Terra[5] in 1935, the main objectives of which were geological and glaciological. A comprehensive classification of pleistocene sequences in the plains of India, correlated with the glaciation of the Himalayas, having been made, a geological foundation for the study of Indian prehistory has been laid. The Siwalik 'Boulder-conglomerate stage,' now considered as of mid-pleistocene time, appears to have witnessed the arrival of man. The evidence is supplied by implements found in the Soan valley, in Jammu and Punch States, and in the fossiliferous Narbada formations in Central India. Characteristic of this industry are hand-axes with pebble butts, choppers, scrapers, discs, flakes, etc., made of cherty limestone, resembling Chellean and Acheulean types. Evidence of a younger culture, essentially a flake culture, has also been discovered in the Soan valley. But the field evidence so far obtained lacks completeness, inasmuch as hardly any station has yet been discovered where the sequence of the various industries can be established on a firm stratigraphical basis.

There is hardly any evidence to bridge the gulf between the palæolithic and the neolithic civilizations. That a long period intervened between them was demonstrated by Bruce Foote in a section of the Sabarmati river in Gujarat. Here a deposit, over two hundred feet deep, separated the implement-bearing neolithic and palæolithic strata.

The progress of human knowledge achieved during neolithic

times is fully illustrated by the implements. They are no longer shaped merely by chipping, but are also ground and smoothly polished, and comprise a large number of types and varieties. Just as the *coup de poing* was the principal instrument with the palæolithic man, the celt became the favourite tool of the neolithic. Among other implements we can recognize various kinds of chisels, adzes, mace-heads, arrow-heads, cores, scrapers, etc. As regards the material, this new people preferred the dark-coloured trap rock to the light-coloured quartzite. For smaller tools they often made use of chert, agate, chalcedony, rock crystal, etc., from which they prepared cores and flakes of various sizes. The so-called 'pigmy flints' (*e.g.*, those from the Vindhya region), consisting of small cores and flakes which are frequently made of chert, agate, jasper, chalcedony, cornelian, etc., and often show beautiful tints, are supposed to belong to the neolithic age.

In 1861-62 H. P. Le Mesurier and W. Theobald drew attention to certain stone implements discovered in the United Provinces that ultimately proved to be neolithic. About 1866 numerous cores and flakes made of flint were discovered on the hills near Sukkur and Rohri in Sind and from the bed of the Indus near by. W. T. Blanford suggested that the cores and flakes were the handiwork of different peoples, the flake-makers representing a more advanced civilization. The first discovery of neolithic implements, recognized as such, was made by W. Fraser about 1872 on the North Hill and Peacock Hill near Bellary in the Madras Presidency. Later investigations by Bruce Foote yielded a large collection of tools from this district. In 1876 a flint scraper was picked up at Jhirak in Lower Sind by F. Fedden, and in 1879 specimens collected from Banda district (U.P.) were described by J. Cockburn. In 1880 a celt of limestone with pointed butt and rounded edge came from the bank of the Indus near Attock. Remains of a neolithic settlement

were discovered near Ranchi by W. H. P. Driver in 1887, and finds of celts, chert flakes and other implements have since been occasionally reported from other districts in Chhota Nagpur. A very interesting collection of implements representing late palæolithic and neolithic industries was made by C. W. Anderson in 1915 in the valleys of the Sanjai and Binjai rivers in Singhbhum.[6] In 1915-16 Sir John Marshall found several neolithic implements at Bhita, in Allahabad, in levels dating from the second century A.D. It is possible that these implements were being used for ritualistic purposes by people of the historical period. Instances have been cited of similar customs prevailing among the ancient Egyptians, Mexicans and other races.

The Age of Metals, notably copper, dawns in North India after the passing of the Stone Age, as in Europe, and this has been attested by the discovery of implements of this material from Bengal to Baluchistan. Some of them have been analysed as bronze, an alloy of copper and tin; but true bronze, containing at least 10 per cent. of tin, was found, up till 1917, in only seven examples.[7] In South India there was no Copper Age, and the Stone Age there, as in Africa, must have passed gradually into the Iron Age.

The first recorded copper implement is a harpoon found in 1821 at Bithur near Cawnpore, followed by the discovery of some copper swords at Fatehgarh (U.P.) in 1829. Some more examples from Bithur were noticed by Hirananda Sastri[8] in 1915. Among earlier finds, notable were those from Mainpuri in 1868, Kosam (Allahabad district) in 1892, and Rajpur (Bijnor district) in 1896. Implements have also been reported from Bulandshahr in the U.P., Monghyr, Hazaribagh, Palamau and other districts in Bihar, and one from Midnapore in Bengal. The largest hoard came in 1870 from Gungeriya in Balaghat (Central Provinces): it consisted of 424 hammered copper implements and 102 thin silver plates. As regards

the Indus valley and Baluchistan, Coggin Brown noted the few specimens that were known up to 1917.

These implements represent a large variety, which include different types of celts, swords, harpoons, chisels, spear-heads, etc. The flat celts have been supposed to be obvious copies of neolithic examples in stone. The complicated system of metallurgy which evolved in this age has yet to be properly investigated in the light of primitive copper-workings discovered in Chhota Nagpur, at Rupavati in Kathiawar and elsewhere.

From this brief preliminary survey we pass to the discoveries in the field of Indian prehistory[9] made by the Archæological Survey since 1921. Till then the Survey had been concerned primarily with the monuments and antiquities dating from the Maurya period, chiefly from the reign of Asoka. Long before the rise of the Mauryas, however, a highly advanced form of civilization, the Vedic, had come into existence; one that, in the light of the inscriptions at Boghaz-köi, appears to have flourished during the latter half of the second millennium B.C. The Vedic tribes, penetrating into India from the north-west, occupied the valleys of the Indus, Ganges and Jumna. Though these river basins have yielded many remains of the historic age, up till now no sites or monuments have been discovered that are definitely attributable to the Vedic people. As regards, too, the earlier palæolithic and neolithic peoples, as well as their successors of the Copper Age, our evidence is limited, as we have already seen, to the finds of stone and copper implements.[10] It was probably the descendants of the Copper Age people whom the Vedic Aryans encountered when they entered India, either towards the end of this Age, or when the use of iron had just been introduced. It has been hitherto supposed that the civilization of the Pre-Aryan people was greatly inferior to that of the Vedic Aryans. But this view has undergone wholesale modi-

fication in the light of recent discoveries in the Indus valley. About these Sir John Marshall wrote in 1924:

> 'Hitherto India has almost universally been regarded as one of the younger countries of the world. Apart from palæolithic and neolithic implements and such rude primitive remains as the Cyclopean walls of Rajagriha, no monuments of note were known to exist of an earlier date than the third century B.C., when Greece had already passed her zenith and when the mighty empires of Mesopotamia and Egypt had been all but forgotten. Now, at a single bound, we have taken back our knowledge of Indian civilization some 3,000 years earlier and have established the fact that in the third millennium before Christ, and even before that, the peoples of the Punjab and Sind were living in well-built cities and were in possession of a relatively mature culture with a high standard of art and craftsmanship and a developed system of pictographic writing.'[11]

The sites of these discoveries are Harappa in the Montgomery district (Punjab) and Mohenjo-Daro in the Larkana district (Sind). Harappa lies on an old bed of the Ravi near Harappa Road Station, while Mohenjo-Daro, situated on the right bank of the Indus, can be approached from Dokri Station, eight miles away.

Before narrating these discoveries we should go back to the year 1872-73, when General Cunningham visited Harappa. He described it as 'the most extensive of all the old sites along the banks of the Ravi.'[12] He made several excavations, his finds consisting of stone scrapers and numerous specimens of pottery. The most curious object in his collection was a seal of smooth black stone, engraved with a 'bull' and a line of inscription in pictographic characters above the figure. The seal, which was found by Major Clark, and

the pottery and stone implements, are figured in Cunningham's Report.[13] No further notice was taken of the site for many years subsequently, though the pictographic seal and a few more examples of it, acquired for the British Museum, became the subject of study by J. F. Fleet and others.

In 1914 Harappa was inspected by H. Hargreaves of the Archæological Survey, who suggested that one of the mounds at this site should be excavated; but nothing was done until a part of it had been acquired, and the site brought under the Ancient Monuments Preservation Act. Excavation was started by Daya Ram Sahni in 1921, but restricted to three of the mounds. His report,[14] published in 1922, clearly established the prehistoric nature of the remains. Two more seals in the unknown pictographic script were found. Besides a large collection was made of pottery vessels and chert implements. Notwithstanding, the age of the civilization represented by the site remained a mystery.

At this stage came the wonderful discoveries made by R. D. Banerji at Mohenjo-Daro. The site, known to the Archæological Survey for years, was not examined till 1922, when Banerji started excavation. The remains, those of an ancient city, are hidden in a series of mounds embracing an area of about 240 acres; but the city originally must have been much more extensive. The alluvium now covering the lower and outlying parts was no doubt the result of floods, and to these floods and to erosion the diminution of the extent of the ruins must have been mainly due.

The highest part of the site, occupied by a Buddhist stupa and a monastery, attracted Banerji's attention in 1920. The drum of the stupa of sun-dried bricks, its core already excavated to the depth of 30 or 40 feet by treasure-seekers, was the most conspicuous feature of the mound. Close by was noticed the second largest mound, which represented a monastery or a temple.

Numerous smaller mounds stand around, marking, according to Banerji, 'the ruins of the village or township which had grown around this stupa and temple at the height of their glory.'[15]

The trial excavation of 1922 at the Stupa Area brought to light buildings of 'four different periods.' The topmost stratum, associated with coins of the Kushān king Vāsudeva I, showed that the stupa was constructed during the second century A.D. From the earliest levels, lying below the floor level of the stupa, four oblong copper pieces inscribed with pictographic characters were found. Other finds consisted of flint scrapers and cores, conch bangles and other ornaments, beads of various stones, and pottery vessels, some of them painted, the majority of the vessels being pointed at the bottom. The most important discovery was a seal of soapstone, bearing the figure of a 'unicorn.' A fragment of a similar seal was discovered in an ancient drain, and a third specimen came from north-east of the stupa. These seals bear pictographic symbols like the seals found at Harappa.[16] Banerji thought that affinities were traceable between the Minoan antiquities and those unearthed at Mohenjo-Daro. Although this equation has proved erroneous, his discrimination of several earlier strata below the stupa level and the recognition that the earlier remains must have antedated the Buddhist structure by two or three thousand years, as suggested by his Minoan parallel, were a great contribution to our knowledge of Indian prehistory.

The collections of antiquities recovered from Harappa and Mohenjo-Daro were examined by Sir John Marshall in 1924, and he was convinced that they belonged 'to the same stage of culture and approximately to the same age, and that they were totally distinct from anything previously known to us in India.' Sir John announced the discovery in a London weekly paper,[17] and drew attention to the presence of copper weapons in many successive

strata at Harappa and Mohenjo-Daro, and the total absence of iron at both. Most of the objects had no parallels among the antiquities of the Mauryan or subsequent epochs, while the pictographs were totally different from the earliest known Brāhmī and Kharoshthī inscriptions. He suggested that this forgotten civilization had been developed in the Indus valley itself, being 'just as distinctive of that region as the civilization of the Pharaohs was distinctive of the Nile.'

Sir John Marshall's announcement was followed by a letter from Professor Sayce,[18] pointing out the close resemblance between the antiquities from the Indus valley and certain Sumerian antiquities from Southern Iraq. 'The discovery,' said Sayce, 'opens up a new historical vista, and is likely to revolutionize our ideas of age and origin of Indian civilization.' After this letter came a detailed article contributed by C. J. Gadd and Sidney Smith of the British Museum,[19] in which a demonstration was attempted of the points of similarity between Indian and Babylonian objects. This supplied a provisional dating for the antiquities of Harappa and Mohenjo-Daro, which on that showing could be attributed to the 'Chalcolithic' Age, and appeared to be roughly contemporary with the Sumerian civilization, referable to the third or fourth millennium B.C. 'Indo-Sumerian,' the name first given to this civilization, was later discarded in favour of the more appropriate term 'Indus.' Further light on its age was thrown by the discovery of an Indian seal, with the figure of a unicorn and a line of pictographs, at Kish in Iraq by E. J. H. Mackay in 1923, in débris beneath a temple of the third millennium B.C. The seal, like a few others reported subsequently, must have travelled from India as a result of commercial intercourse that was then presumably proceeding between India and the Near East.

The synchronism now established was of far-reaching import-

ance, as it gave a new orientation to the existing ideas regarding the antiquity of Indian civilization. Sir John Marshall was emboldened to organize further exploration of Harappa and Mohenjo-Daro. During 1923-24 M. S. Vats, of the Archæological Survey, sank two long trenches at Mohenjo-Daro, revealing several distinct strata of buildings lying one below another down to the level of the subsoil water. During the next season the work was continued and extended by K. N. Dikshit, who was able to clear some of the buildings through which his own trenches had been driven, and he recovered many antiquities, including some marvellous examples of painted pottery and jewellery. During these two seasons the work at Harappa was continued by Daya Ram Sahni. After these discoveries Sir John Marshall was able to persuade the Government of India to finance a more liberal scheme of excavation and exploration. In 1925-26 he undertook himself the excavations at Mohenjo-Daro, assisted by a number of officers. The work was started in four distinct areas, supervised respectively by Hargreaves, Dikshit, Vats and Sir John himself. Sir John exercised also a general control over all the excavations and was responsible for co-ordinating the results obtained therefrom. In 1926 the work at Mohenjo-Daro was continued by Daya Ram Sahni and E. J. H. Mackay, and from 1927 to 1931 it was conducted by the latter.

These epoch-making discoveries opened a new vista of research. Sind, hitherto an obscure corner of India, now engaged the attention of archæologists all over the world. Mohenjo-Daro could not have been the only site of the period, nor Sind the only area within which the civilization developed, and already the discoveries at Harappa suggested that similar cultural stations must have existed also in the Upper Indus valley. The need for a systematic survey of Sind, Baluchistan and the Punjab was therefore keenly felt.

In 1925-26 H. Hargreaves conducted excavations at Nal in the

Kalat State (Baluchistan). This site, some twenty years before, had yielded a unique type of polychrome pottery.[20] This Nal pottery, in point of shape, design and technique, had no parallel amongst the ceramic remains of the historic period. It was therefore desirable to ascertain its date; and, as it was of the painted class, to determine its relationship to the coloured fabrics of Harappa and Mohenjo-Daro. No definite solution has yet been found, but the work of Hargreaves at Nal[21] has proved conclusively the 'chalcolithic' character of the pottery and other remains (burials, etc.) with which it was associated.

Nal has yielded two kinds of burial, both ascribed to the same age. One is complete burial, the human body unaccompanied by pottery or other sepulchral furniture. The other, 'fractional burial,' that is to say, human remains were buried with vessels supposed to have contained food and drink for the use of the dead. The polychrome pottery of Nal has a pale dark buff, or straw colour, or greenish appearance, with designs in brown, sepia or black, filled in after firing with blue, green, red, yellow or white. Some patterns have analogies in Susa I pottery and other western fabrics, from which it may be concluded that this pottery was an intrusive element in Baluchistan.

During 1926-27 and 1927-28 a survey of Baluchistan was carried out by Sir Aurel Stein. In course of this he discovered a number of 'chalcolithic' sites, showing the diffusion of the civilization all over the region in the fourth and third millennia.[22] Already, during his third Central Asian expedition in 1916 [see Chapter III (*d*)], Sir Aurel had collected prehistoric materials from sites in the desert delta of Seistan.[23] In 1927 he journeyed along the Waziristan border, in the Zhob valley, in the Loralai district, and in Quetta-Pishin. Among the more important sites discovered and explored were Dabar Kot, Sur-Jangal, Spina-Ghundai, Periano-Ghundai,

Moghul-Ghundai and Kaudani.[24] Sir Aurel's tour next season took him south and south-west of Kalat, to the Makran coast near Gwadar. In course of this he examined a number of sites; the most interesting of them are Sukhtagen-dor,[25] Shahi Tump, Kulli, Nundara, Mehi and Kargushki. In these areas he collected plenty of artifacts, painted pottery being the most important of them. This pottery has been divided by Sir John Marshall[26] into three main groups—namely, red-and-black wares of the Mohenjo-Daro type and its sub-varieties (Dabar Kot, Moghul-Ghundai, Periano-Ghundai and Sur-Jangal); the buff wares, in which are included those found at Nal and Shahi Tump (associated with burials); and hybrid wares, including the polychrome-banded type, and such wares as those discovered at Kulli and Mehi. The evidence furnished by these ceramic remains leads to the conclusion that there were at least two 'chalcolithic' cultures, of which one, not wholly confined to the eastern districts, was allied to, and influenced by, that of the Indus valley, while the other culture had distinct relationship with the western zone—that is to say, Iran (Persia) and Iraq (Mesopotamia).

Activity in surveying sites was not confined to the trans-Indus regions; explorations were undertaken in the Indus valley as well. In 1925, K. N. Dikshit[27] came across two more sites of the Indus period: Lohumjo-Daro in Larkana district and Limojunejo in Upper Sind Frontier district; and in 1927 the present writer conducted trial excavations at the mounds of Jhukar near Larkana.[28] This site had been visited in 1918-19 by R. D. Banerji, and its largest mound, the site of a stupa, was declared a protected monument in 1921. Excavation proved it to contain remains of buildings of about the fifth century A.D. Remains of the same date were found also on the top of some of the smaller mounds, but below that layer buildings of the Indus period lay in two strata, one above another. The lower stratum yielded objects similar to those found at Mohenjo-Daro,

while the upper represented a later phase of the Mohenjo-Daro culture, which was traced subsequently also at Lohumjo-Daro.

Further exploration in Sind was conducted by the present writer during 1929-30 and 1930-31, resulting in the discovery of numerous 'chalcolithic' sites.[29] From the remains excavated at these sites it was possible for him, for the first time, to classify the Sind potteries, as well as to arrange the sites and the different phases of culture represented by them, in sequence. This sequence was established, partly on stratigraphical grounds, partly on technical considerations based on a comparative study of the wares and their decoration. The earliest pottery, found first at Amri and subsequently at Chauro, Damb Buthi, Lohri, Ghazi Shah and other sites, is a polychrome thin ware with geometric patterns. The colours used are black and chocolate or reddish brown, applied on a slip or wash of buff or light red. The shapes of these vessels, as well as their decoration, tally with the pottery of Kulli and Mehi in Baluchistan. This Amri-Kulli-Mehi family may have been the prototype of the Nal ware, wherein the polychrome technique, as well as the geometric tendency of the patterns, is more fully developed. This thin pottery is succeeded by a thick ware, with designs in black on a polished red slip. In most cases geometric, animal and plant devices are combined, geometric motifs rarely occurring by themselves. This is illustrated by examples found at Chanhu-Daro and Ali Murad, which are akin to those already known from Mohenjo-Daro. A third group of Sind pottery, principally from Trihni on Lake Manchhar, bears decoration in black or chocolate on a light red or buff slip, having in some examples a reddish-brown band at the neck. The common motifs are plants and flowers, sometimes very much stylized. An analogous fabric, and one with which it appears to have been contemporaneous, is found at the upper prehistoric levels of Jhukar and Lohumjo-Daro. A fourth group is a black

ware, with incised geometric patterns, found at Jhangar, near Lake Manchhar. This black ware is comparable to the pottery of some of the Early Iron Age sites in the Madras Presidency.

Not only stylistically, but also typologically, there is much difference between the Amri and Mohenjo-Daro potteries, and it is from this that they appear to be products of different cultures. The Amri class, which has affinities, not only with Kulli and Mehi in Baluchistan, but with sites farther afield—*e.g.*, Al-Ubaid, Jemdet Nasr and Samarra in Iraq, Susa I and Tepeh Musyan in Western Iran and Sahri-Sokhta and other sites in Seistan—is to be regarded as an intrusive element in the Indus valley. The Sind survey has demonstrated that, while painted pottery was common during the earliest period, in the time of Mohenjo-Daro unpainted pottery became more common, the painted kind going out of use gradually before the protohistoric period. The lateness of the black incised fabric from Jhangar is attested also by finds made in 1935 by E. J. H. Mackay at the uppermost levels of Chanhu-Daro.

From 1926 to 1931 excavations were conducted at Harappa by M. S. Vats, of which only provisional accounts have so far been available.[30] The two outstanding discoveries at Harappa are a number of 'parallel walls,' the significance of which has not yet been made clear, and a cemetery of the 'chalcolithic' period. In this cemetery, which has been only partially uncovered, skeletal remains have been exposed at two strata. Complete burials are found in the lower stratum, where skeletons are accompanied by groups of pottery vessels, including jars with splayed neck, small flasks, flat covers and dishes, and deep bowls, some of which are painted. Above, in another stratum, are exposed more than one hundred 'fractional' burials contained in painted jars, the patterns thereto appertaining being totally different from any so far discovered in the Indus valley. The remains in these jars ordinarily consist

of a skull, but in some cases of only a few selected bones. The jars are of various types (round, ellipsoid, carinated, etc.), which were invariably covered with lids. There were found also numerous pottery urns, supposed to have held funerary offerings. They contained bones of animals, fishes and birds, decayed grain, ashes and charcoal, as well as triangular terra-cotta cakes, toys and various other ceramic articles.

The human remains recovered in the Indus valley and in Baluchistan have been partially studied by Colonel R. B. Seymour Sewell and B. S. Guha of the Zoological Survey of India. When the reports of the last-named are published, we shall be enabled to form an idea of the racial characteristics of the peoples who inhabited the Indus valley in the 'chalcolithic' period. Guha's preliminary studies[31] indicate that the population consisted mainly of two types of long-headed people, with a broad-headed element also. These three groups have been traced among the skeletal remains of Al-Ubaid and Kish, showing a kinship then existing between the racial strains of pre-Sargonic Iraq and the Indus valley.

No systematic survey of prehistoric sites has yet been made in the Punjab. One examined partially by M. S. Vats in 1929-30 is Kotla Nihang near Ropar in Ambala district,[32] where pottery, terra-cottas and minor antiquities were unearthed, closely resembling those from Harappa and Mohenjo-Daro. Another site, examined by Vats in 1933, lies on the old bed of the Beas river near Chak Purbane Siyal[33] in Montgomery district, some thirteen miles south-east of Harappa. Here, on the surface of the mound, and in two shallow pits sunk in it, pottery vessels, terra-cotta figurines, faience ornaments and beads were found, along with a few chert pieces, all typical of the 'chalcolithic' culture, and resembling those found at Harappa and Mohenjo-Daro. There are probably many more sites

between the Ravi and the Beas, and a thorough survey of this region suggests itself.

The southern and eastern limits of the Indus civilization are still very obscure, as the great river valleys of South India and the United Provinces await exploration. Bruce Foote's researches have shown that prehistoric sites exist in the Kathiawar peninsula. In 1935, at the invitation of the Thakur Sahib of the Limbdi State in Kathiawar, M. S. Vats undertook a preliminary reconnaissance, visiting a mound at Rangpur, twenty miles south-east of Limbdi, where he did some experimental digging.[34] Several 'chalcolithic' strata were reached, the finds comprising many objects distinctive of the Indus civilization, including a class of painted pottery representing one of its later phases.

The financial stringency of 1931 and the years that followed necessitated wholesale curtailment in the programme of the Archæological Department. The survey of prehistoric sites in Sind was left incomplete; no survey of the Punjab and the United Provinces could be undertaken; and the important operations at Harappa and Mohenjo-Daro were abandoned. Attention was necessarily concentrated on the publication of data already collected in Sind, the Punjab and Baluchistan. Sir John Marshall's three-volume work, *Mohenjo-Daro and the Indus Civilization* (Probsthain, 1931), recorded the operations at that site up to 1927. E. J. H. Mackay prepared a report of the later excavations,[35] and M. S. Vats undertook one for the excavations at Harappa. The publication in 1934 of a report[36] of the explorations conducted by the present writer in Sind between 1928 and 1931 created renewed interest in the prehistoric archæology of the Indus valley. It may be recalled, too, that in 1935 an expedition, representing the School of Indic and Iranian Studies of the United States of America, was allowed by the Government of India to carry on excavations under Mackay in Sind.

The 'chalcolithic' site of Chanhu-Daro was thoroughly excavated by this expedition, and the finds divided between the Museum of Fine Arts, Boston, and the Government of India. Preliminary accounts[37] of the excavation were published in 1936.

The data collected threw considerable light on the life of the people inhabiting the Indus valley, its western borderlands and Baluchistan in the 'chalcolithic' period during the fourth and third millennia B.C. In Sind this civilization extended almost up to the Arabian Sea. The ancient people lived also in the highland belt on the west, in the strips of land between the Khirthar and other ranges. The present position of Amri, Chanhu-Daro, Lohumjo-Daro, Mohenjo-Daro, etc., indicates that anciently, too, these stations existed in close proximity to the Indus, although it is likely that the course of the river then followed a somewhat different curve.

Living in a flat riparian tract, the people found unlimited scope for agriculture, and developed a comfortable style of living. They must have been, however, subject to inroads by less fortunate but sturdier neighbours from hills, and their cities were frequently menaced by heavy floods. The inundations—an annual feature, as they are now—contributed to the irrigation of the soil, and consequently to bumper harvests. In the hilly regions agriculture was restricted, as the supply of water depended on rain and natural springs, as at this day. Settlements grew up within easy reach of the springs and the torrent beds. But wealthy cities, like Mohenjo-Daro, could not develop in a mountain fastness, where fertile soil like that of the Indus was not available. There are, however, indications that the country then enjoyed a more bounteous rainfall than at present, with brighter prospects of agriculture. Evidence is afforded by the large number of street drains and the rainwater pipes of Mohenjo-Daro, by the universal use at the valley sites of burnt instead of sun-dried bricks in building, and by the representa-

tions on seals of the tiger, the rhinoceros and the elephant—animals which favour a moist habitat.

The Indus people, experimenting throughout many centuries, developed a complicated civilization, in which commerce and industry, not merely agriculture, played a prominent part. The excavations of Mohenjo-Daro and Harappa reveal this civilization already in a stereotyped and fairly homogeneous form. The design and technique of the objects of art and industry, also the town-planning and architecture of the two cities, are so similar that often the remains of the one can pass easily for those of the other. What form of government the people then developed we do not know; but there can be no doubt that the cities must have been each in charge of a central authority, which provided definite planning of the streets and houses, efficient supervision of the water-supply and the disposal of the sewage.

The buildings in the plains were constructed with burnt bricks, usually in alternate courses of headers and stretchers, as in modern 'English bond.' At the hill sites bricks were never used, and the walls, supported on a foundation of stone rubble, were built of stone up to a height of two to three feet. The basement consisted of rough-hewn blocks, often laid with mud mortar, while the super-structures were of mud, and such material as reeds and wood. The walls of the brick-built and stone-built houses were alike devoid of decoration. The bricks were laid in mud, or in a mortar consisting of mud and gypsum. The walls in the smaller structures were perpendicular on the outer face, while in the larger they were battered. The floors were usually of flat-laid bricks. In bathrooms and platforms of wells the bricks were placed on edge, often showing very fine joinery.

Some buildings may have had more than one storey. Stairs leading to upper storeys or the roof are a common feature at

Mohenjo-Daro. The roof may sometimes have been made of reed and matting overlaid with mud, as in Sind today. Most buildings had their own brick-lined wells, the bricks usually wedge-shaped. Two outstanding features of Mohenjo-Daro buildings are the bathrooms and drains. There were drains from the houses, and street drains into which those others led, the street drains discharging into soak-pits in the bigger thoroughfares. A feature of the system was the brick culvert with corbelled roof, through the floor of which passed a channel carrying off the surplus water. Most of the buildings were dwelling-houses, but there were also a few imposing buildings of an unascertained purpose. Each house contained a number of rooms and a courtyard, while a lane or street separated the different blocks of houses from one another.

The most remarkable building at Mohenjo-Daro is the Great Bath, an open quadrangle with verandahs on four sides, behind three of which are a series of chambers and halls. Within the quadrangle was a large paved bath about eight feet deep, thirty-nine feet long and twenty-three feet broad, with two flights of steps. At the foot of each flight above the pavement was a low platform. The bath was connected with a covered drain at one corner, having a corbelled roof six and a half feet high. The lining of the tank, made of dressed brick laid in gypsum-mortar, of a thickness of three to four feet, had behind it an inch-thick damp-proof course of bitumen, backed by a thin wall of brick. Behind this was a packing of crude brick, and finally a solid layer of burnt brick enclosing the whole. Adjoining the Great Bath were ranges of small bathrooms, with a drain to carry away the water. The purpose of the Great Bath and the adjoining structures cannot be determined with certainty, and it is a mystery how the Bath was actually filled. It is not understood either why so elaborately constructed a drain should have been necessary for the Bath unless it

could also have been utilized for letting in fresh water from the Indus, when its volume and pressure increased sufficiently in flood-time.

The excavations at Mohenjo-Daro and Harappa have yielded numerous objects of household use, and examples of the arts and crafts practised by the Indus people. To some of these we may draw attention. There are implements and tools of copper and bronze, the percentage of tin in the bronze fluctuating from nine to even twenty-six per cent. The implements include spear-heads, daggers, knives, arrow-heads, fish-hooks, chisels, razors, axe-adzes, saws, etc. A few tools are inscribed with pictographs, taken by some to be numerical signs. Also in use were chert flakes, which may have principally served as knife-blades. Cores from which these flakes were obtained have also been found. Other stone objects are maceheads, saddle-querns, palettes, and a class of cubical weights of varying denominations, some highly polished. The commonest household article is pottery, almost invariably wheel-made. The vessels are either plain or decorated, the ornamented specimens having a red slip upon which are painted various patterns in black, including vegetable and animal motifs, also a few geometric devices. Plain, undecorated pottery, however, is far more common than painted ware. Barring a few crude statues of steatite, alabaster, or limestone, the only other examples of figural art are the large number of terra-cottas representing human as well as animal beings. A familiar type is a semi-nude woman wearing a skirt with a girdle, and a fan-shaped headdress with two cup-like projections, in which presumably was burnt oil or incense. She is supposed to represent the Great Mother Goddess, whose cult obtained so widely in the Near and Middle East. Some of the most beautiful examples of Indus art are afforded by the steatite seals, on which are depicted such animals as the humped or Brahmani bull,

the elephant, the buffalo, the tiger, the rhinoceros, and fantastic creatures like the unicorn, together with inscriptions in pictographic characters. Of jewellery there are personal ornaments such as necklaces consisting of gold beads interspaced with beads of steatite and semi-precious stones like jadeite. There are also gold fillets, bangles, a bracelet of six strings of gold beads separated by gold spacers, and a fine girdle of six rows of barrel-shaped cornelian beads. Cheaper ornaments were made from glazed and vitreous pastes and from faience. Another craft was the making of inlay in various geometric patterns out of sawn chank shell. Examples of ivory work are dice, hairpins, etc. A very large number of beads have been collected from the Indus sites, and complete evidence of the bead-making process has been obtained from Chanhu-Daro, where stone drills to bore the beads have also been found.

The 'Chalcolithic Age' must gradually have passed into the Iron Age. Sites belonging to the latter have been discovered in the Tamraparni valley in South India, notably in the gravelly mounds or low hills of Tinnevelly district. They are probably to be associated with the Dravidians, the inhabitants of the country at the time of the Aryan invasions. The best known of the Iron Age sites is at Adittanallur, a site first brought to notice in 1876, when Dr. Jagor visited it and collected a number of articles for the Berlin Museum. The site was investigated by A. Rea[38] of the Archæological Survey between 1899 and 1905, when he exposed a number of prehistoric burials. Further exploration was made in 1903-4 by Louis Lapicque of Paris, who made additional collections and propounded the theory that the remains belonged to some proto-Dravidian race. Covering an area of 114 acres, Adittanallur is the most extensive prehistoric site so far discovered in South India. The excavations of Rea show that the prehistoric people excavated pits in the solid rock and in the adjoining hard soil, depositing in them

funeral urns in rows. Some of the urns, nearly three feet in diameter, contained a complete human skeleton. The rest of the urns contained in most cases only a selection of the bones, either by themselves or in association with a variety of articles. The smaller pottery vessels, constituting the bulk of the finds, have a characteristic red and black polished surface. A number of stands for such vessels have also been found. Vessels of domestic use were found both inside the big urns and outside them. As many of them contained rice husks, it may be surmised that in these receptacles grain was offered to the dead. Among other interesting finds were iron implements such as swords, daggers, spearheads, etc., gold and bronze diadems, bronze bowls, hangers, cups, strainers, and animal figures such as the buffalo, also cornelian beads and miscellaneous ornaments of cut wire. A special interest attaches to the animal representations in radiating rows, supported on metal frames. The most significant figure is the buffalo, which still plays an important part in the religious ritual of the Todas of the Nilgiri hills. Here it may be noted that J. W. Breeks, in the early seventies, opened a number of cairns and barrows in the Nilgiris, and made a large collection of terra-cotta figures, among which also there were representations of the buffalo.

As regards urn burial, either the complete body was placed inside the urn, or only a selection of bones, often including the skull. The vessels for the partial burial were of small size, narrow at the mouth. Urn burial, obtaining at Harappa in the Chalcolithic Age, has been traced at many Iron Age sites in South India. This form of burial must have continued till historic times, as it is referred to in the Tamil poem *Pura-nanuru*:[39]

> "O potter-chief! maker of vessels!
> 'Tis thine to shape an urn, so huge
> That it shall cover the remains of such an one."

A few other sites of the Iron Age deserve to be mentioned. Perumbair in the Chingleput district was examined by A. Rea[40] between 1904 and 1908. His excavations resulted in the discovery of a large number of prehistoric remains differing in many details from those found at Adittanallur. Here the burial places are marked by stone circles; in the centre of each was deposited either a pyriform urn or a pottery cist or a sarcophagus supported on three rows of short legs. The finds from Perumbair, recovered from both inside and near the urns, consisted mostly of pottery vessels, iron implements and chank shell ornaments. The characteristic lugged pottery was also associated with this site.

In 1910-11 Rea opened some caves at Perungulam near Tellicherry in Malabar district. Cut out of laterite rock, they are unlike the prehistoric tombs found elsewhere. 'Behind the open space in front,' to quote from Rea's report, 'a few feet below the ground level, there exist recessed entrances with enclosed slabs. There are four or five chambers, one within another, in this frame, and the slab perfectly fits the outermost. The cells within the caves have cup-like domes, oval at the bottom with a radius on the longer side of 4 feet, and on the shorter of 3 feet. In the centre, a cut stone pillar of sufficient strength, either circular or square, to withstand the weight of the laterite roof above, is cut.'[41] The sepulchral remains were found in association with iron implements, grinding stone and pestle, and pottery vessels of various shape. A characteristic form is the polished red jar with four legs. Examples of a black ware with polished surface were also found at this site.

Another site examined by Rea was Kaniyampundi[42] in the Coimbatore district, where he found several groups of deposits, each within a stone circle of boulders. The tomb was supported along the four sides by stone slabs, which yielded pottery vessels, some with cuplike lids, and iron implements.

In 1913-14 A. H. Longhurst examined a number of cairns and stone circles, situated close to the Nilgiris at Sirumugai[43] in Coimbatore district. In one circle he excavated down to a grave, and found an urn covered by a lid at the mouth. The urn was packed to the brim with fine red earth, and embedded in it were the remains of human skulls and bones, iron implements, domestic pottery, a few crystal beads and some stone flakes. In a rock-cut tomb at the same site were found three urns, each with four legs attached to the base and containing earth mixed with minute fragments of bones.

In 1914-15 Longhurst undertook an examination of certain burials contained in cairns and circles at Gajjalakonda in the Kurnool district.[44] In one of them were found two terra-cotta sarcophagi and pottery vessels, all covered up by a large stone. In another was a single sarcophagus resting on pottery ringstands. These sarcophagi contained bones, and all the pots were full of earth mixed with decayed grain.

Since these discoveries numerous megalithic remains and burials have been reported from South India, including Hyderabad and Mysore. In Hyderabad cairns and stone circles have been excavated by Yazdani, Munn, Wakefield and Hunt. In his study of the cist graves in Raigir, Dr. Hunt[45] distinguishes two kinds of pottery associated with megalithic remains—namely, a red pottery and a black pottery with red base, both bearing a number of marks or symbols. Megalithic sites have also been discovered in the Chhota Nagpur plateau, from Palamau to Dalbhum near Tatanagar, principally by S. C. Roy.[46] At all the sites a class of polished stone implements are found associated with copper and bronze objects and also sometimes with iron. From Ruangarh in the Dalbhum district E. A. Murray[47] has recovered polished stone chisels, or small celts with cutting edges, along with chert flakes and cores, and also iron slags. The discovery of an identical type of stone

implement in association with pigmy flakes, cores and beads has been made near Durgapur on the Damodar river in the Burdwan district of Bengal. This site, explored by the present writer in 1937-38, is expected to throw additional light on the protohistoric culture of North-Eastern India.

N. G. MAJUMDAR.

[For NOTES, see p. 197.]

(*b*) BUDDHIST MONUMENTS

After the reorganization of the Archæological Department in 1902, much of the time and energy as well as the bulk of the funds provided for archæological work had of necessity to be devoted to the repair and preservation of monuments standing above ground. It was, however, never the intention of the Government of Lord Curzon that other branches of archæology, and particularly excavation and exploration, should be allowed to suffer. His policy, as quoted in Sir John Marshall's Chapter I—'to dig and discover, to classify, reproduce and describe, to copy and decipher, and to cherish and conserve'—has been strictly adhered to during the last thirty-seven years and has resulted in the discovery of numerous ancient monuments, including remains of long-forgotten cities.

Sir Alexander Cunningham and his assistants had from 1862 onward carried out excavations at different sites; but they were of a desultory character and restricted to portions of central and northern India. During the five years following the year 1926, with the ready support of the Legislative Assembly, excavations were made on a large scale at such sites as Harappa, Mohenjo-Daro, Taxila, Nagarjunikonda, Nālandā, Paharpur, etc. Unfortunately financial stringency intervened, and in 1931 the special annual grant for excavation, along with sums from other heads, was withdrawn and has not, so far, been restored. In the circumstances

it is gratifying to find the Viceroy stressing, in his address to the Central Legislatures in September, 1937, the necessity of further attention to archæological work in India. Numerous ancient sites, holding promise of rich discovery and scattered all over the country, await exploration, and it may now confidently be hoped that their examination will not be unduly delayed.

Asoka Pillars.—Apart from the chalcolithic sites, the majority of the monuments so far exposed by excavation are Buddhist. Many of these had already been made known and identified by Cunningham with the aid of the valuable itineraries of the Chinese pilgrims. The earliest among these monuments are the monolithic columns of Asoka, several of which bear his well-known pillar edicts or other commandments, in beautifully engraved Brāhmī characters. Though much smaller than the huge obelisks of ancient Egypt, the transport and erection of these pillars must have entailed considerable skill on the part of Asoka's engineers. These pillars were erected near important cities or along the routes which Asoka followed to places of Buddhist pilgrimage in the twelfth year of his reign. Vincent Smith surmises that at least thirty such pillars must have been set up by that emperor. Of the Asoka pillars so far discovered (see Appendix, page 132) only two—namely, those at Lauriya Nandangarh and Bakhira (which has no inscription)—remain in a perfect condition complete with their uninjured shafts, bell capitals, abaci and crowning animals. The bull and lion capitals of the two pillars at Rampurva were unearthed in 1907-08; the pillar at Sarnath and its capital in 1904-05; and the one at Sanchi during the years 1912-19. The excavations of the writer of this note at Bairat in the Jaipur State in the cold weather of 1935-36 brought to light numerous fragments of two pillars which must have been erected on that site by Asoka. All these pillars are carved in a Perso-Hellenic style, and in their plain, unfluted shafts,

other early ones on the Sanchi and Bodh Gaya railings is the total absence in them of the figure of Gautama Buddha, either before or after his enlightenment, and of representations of his disciples and other monks. The presence of the Blessed One is indicated by one or other sacred symbol.

Sanchi.—The exploration and preservation of the monuments of Sanchi by Sir John Marshall during the years 1912-19 is one of the most notable achievements of the Archæological Department. The funds for this purpose were generously provided by the Government of Her Highness the late Begum of Bhopal, and the monuments of Sanchi are now the finest and best preserved group of such monuments to be found anywhere in India. These monuments are situated on a low, flat-topped hill, part of which is occupied by the village of Sanchi in the Bhopal State in the neighbourhood of Bhilsa, where in ancient times stood the famous city of Vidisā, the capital of eastern Malwa [see also under Bhopal in Chapter VII (*h*) (i)]. Vidisā is now known by the modern name of Besnagar, and is well known to archæologists from a well-preserved Garuda standard, which was set up by a Greek ambassador named Heliodoros, *circa* 140 B.C. It is surprising that, although Sanchi must have been an important centre of Buddhism from the time of Asoka until about the twelfth century A.D., it does not appear to be connected in any way with the life of the Buddha or to be referred to in the Buddhist texts or in the itineraries of the Chinese pilgrims. In the circumstances there is considerable force in General Maisey's view that Sanchi is the modern representative of the Chetiyagiri of the Ceylonese chronicle, the Mahāvamsa, in the neighbourhood of Vidisā, where Asoka as Viceroy of Ujjain married the daughter of a wealthy merchant, and where his son Mahendra halted in his mother's monastery when he was on his way to Ceylon.

The monuments of Sanchi, which were first brought to notice

in 1818, had suffered considerable damage at the hands of ignorant villagers and amateur archæologists. There was consequently much misconception about their dates. Sir John Marshall's researches have settled the entire chronology with precision, and the visitor to these monuments may now in the course of a few hours acquaint himself with the history of this site and the various styles of art and architecture that prevailed in these parts during the 1,400 years that Sanchi was in a flourishing condition.

When Sir John Marshall started his excavation on this site in 1912, only a few of the buildings were visible above the débris. The total number of buildings now on view is 51, all of which, with the exception of Stupa No. 2, are situated on the top of the hill and surrounded by a solid stone wall erected about the eleventh century A.D. and extensively repaired by Colonel Cole in 1883. These monuments on the summit are divisible into three separate groups. The Great Stupa, or Stupa No. 1, which occupies the middle portion of the central area, consists, as now restored, of a large hemispheric dome of stone masonry, about 120 feet in diameter and 54 feet in height, with a lofty berm around its base, which was approached by a double flight of steps on the south side and flanked by a low balustrade. There was at the ground level a much more massive railing to enclose a lower circumambulatory passage. The original stupa on this site was a nearly hemispheric dome of brick of about half the diameter of the present stupa and probably one of the traditional 84,000 stupas ascribed to Asoka. This brick stupa had a wooden railing around it and a stone umbrella of the typical Asokan technique at its top, pieces of which were recovered in the course of the excavation. Cunningham and Maisey, who explored the interior of the stupa by a shaft sunk from top to the ground level, found neither a relic chamber nor a deposit of any kind. This original stupa is supposed to have been destroyed by Pushyamitra

in the middle of the second century B.C. and enlarged soon afterwards by the addition of an outer stone envelope with the usual stone railing and umbrella at its truncated summit. The stone box which supported the shaft of the umbrella presumably contained a portion of the Buddha relics secured from the original brick stupa. The next addition was the lofty ground balustrade of stone, a perfectly plain copy of a wooden fence, which, according to numerous inscriptions engraved upon it, was presented by various votaries, each subscribing the cost of an upright post, a cross bar, a coping stone, etc. To the same period belongs the extensive stone pavement around this stupa. The richly decorated gateways of the lower railing and the smaller balustrades flanking the berm and the staircases were added under the dynasty of the Andhras, *circa* 70 B.C. The bulk of the reliefs on the gateways and on the smaller balustrades are the products of the local Malwa school of sculpture, which flourished during the Sunga period and which exercised considerable influence in Central and Western India and in Hindustan. On behalf of the Archæological Survey of India these reliefs were subjected to an intensive study by Mons. A. Foucher, and his detailed account of them appeared in Sir John Marshall's three-volume monograph entitled *The Monuments of Sāñchī* (1938).

There were many monuments built in course of time around the Great Stupa, including stupas, memorial pillars and temples. The stupas date some from the middle of the second century B.C., some from the Gupta period, and others of small size belong to the seventh and succeeding centuries. The memorial pillars which stood on the main terrace bear interesting epigraphical documents. In many cases these determine the date of the pillar, but it is also possible to determine the period of construction from the design and material employed. Similarly, the temples, or monasteries, that range in date from the early Gupta period to the tenth or eleventh

century, illustrate the changing course in architecture down the centuries.

The balustrade of Stupa No. 2, situated on the west slope of the Sanchi hill, is adorned with reliefs exhibiting a distinct affinity to those on the gateways of the Great Stupa, and must be coeval with them. Near the centre of Stupa No. 2 was found a large relic box of white stone and inside it four smaller caskets of steatite. These caskets contained fragments of human bones, which, according to the inscriptions engraved on their lids and on the side of the outer box, were the remains of Buddhist teachers and saints, some of whom had taken part in the third Buddhist convocation held under Asoka at Pātaliputra in the nineteenth year after his coronation, while others were sent on religious missions to the Himalayas. The stupas in which these relics were originally deposited have not yet been traced.

Amaravati.—Another important centre of Buddhism was situated on the bank of the river Kistna in the Guntur district of Madras, where three important large stupas have been found, those at Amaravati, Jaggayyapetta and Nagarjunikonda. That at Amaravati, 192 feet in diameter, was destroyed in the beginning of the nineteenth century, but many of the sculptured slabs with which it was decorated can now be seen on the staircase of the British Museum and in the Central Museum, Madras. These range from about 200 B.C. to the third century A.D. That at Jaggayyapetta, thirty miles north-west of Amaravati, was explored by Burgess in 1882, and has been described by him in his monograph, *The Amaravati and Jaggayyapetta Stupas* (A.S.S.I., Madras, 1887).

The Nagarjunikonda site was discovered in 1925 and has been systematically explored by Mr. A. H. Longhurst. The Great Stupa at this place enshrined a body relic of the Buddha himself and was founded by Chantisiri, a princess of the Ikkhaku dynasty. It must

have been a hemispheric structure like those at Sanchi and Bharhut and not less than sixty feet in height. The lower portion, which alone has survived, was built in the form of a wheel with hub, spokes and tyre built in brickwork, a kind of plan not found in northern India. Another interesting feature of this and some other stupas of this area was a rectangular platform at each of the cardinal points projecting from the terrace round its base. Each of these platforms had a cornice slab of stone and supported a group of five stone pillars some twenty feet in height. The Buddha relic of the stupa is now enshrined in the Mahabodhi Society's new Vihāra at Sarnath. In Stupa No. 6, which was constructed on the same plan as the Great Stupa, were found, besides a bone relic and the usual jewels, two small medallions of thin gold embossed with the heads of a male and female figure in Greek style, presumably intended to represent portraits of the ruling king and the princess Chantisiri. (There was at that time a large trade between Rome and Southern India carried on by Greeks from Alexandria.) A cornice stone found in this stupa bears interesting reliefs portraying the conversion of a Brahmanical king to Buddhism.

One of the two apsidal temples brought to light on a separate hill to the east of the Great Stupa had incised on its floor a long inscription recording the fact that the temple had been dedicated to the fraternities of Ceylonese monks who had converted such distant countries as Kashmir, Gandhāra, China, etc. This inscription also refers to the hill on which the temple has been founded as Siripavata, where, according to a Tibetan tradition, Nāgārjuna, the founder of the Mahāyāna system of Buddhism, had spent the latter part of his life. This circumstance is probably responsible for the present name of the site. The inscriptions found on this site have been very ably dealt with by Dr. Vogel in the *Epigraphia Indica,* Vol. XX, Pt. I, January, 1929.

Places of Buddhist Pilgrimage.—The Archæological Survey of India has well served the Buddhist community by the identification and exploration of "the eight great places of Buddhist pilgrimage." These are: (1) the Lumbinī Grove (modern Rummindei in Nepal), where Buddha was born; (2) Bodh Gaya, or Gaya of the enlightenment (in South Bihar), where Buddha attained spiritual wisdom; (3) Isipatana (modern Sarnath near Benares), where Buddha preached his first sermon; (4) Kusanagara (modern Kasia in the Gorakhpur district of the United Provinces), the scene of Buddha's death; and four other places, scenes of miracles that Buddha performed. The eight events connected with these places have been venerated from early times, and are found portrayed in the early reliefs of Bharhut. They were also a common subject for sculptors both in the Gupta and medieval periods.

These eight places fell into ruin about the twelfth century A.D., and remained buried and forgotten until they were reidentified by Sir Alexander Cunningham. The principal explorers of these sacred places were Sir John Marshall, Dr. Sten Konow, Dr. J. Ph. Vogel, Mr. Hargreaves, Dr. Hirananda Sastri and the writer of this chapter, who had the privilege of participating in the exploration of five of these sites.

Lumbinī Grove was the first holy place visited by Asoka. This site is to this day marked by an Asoka pillar standing in its original position and bearing an inscription designating the spot as the place where the Blessed One was born and announcing a remission of taxation. The capital of this pillar, which is stated to have borne the figure of a horse, is missing, and may be brought to light by the excavations in progress under the supervision of the newly founded Department of Archæology in Nepal.

Gaya also was the scene of early pilgrimages, and in the Ceylonese chronicle, Mahāvamsa, there are frequent references to

pilgrimages to this place by Ceylonese laymen and monks to worship at the sacred Bodhi tree. The Buddhist monuments there were brought to light by Sir Alexander Cunningham and his assistants. They included a large temple, portions of a high balustrade of stone around the temple and the *ficus religiosa* tree to the west of it beneath which the Buddha attained spiritual wisdom, and remains of various stupas and shrines.

A well-preserved relief on the Bharhut railing shows that in the second century B.C., when that railing was constructed, the Bodhi tree of Bodh Gaya was surrounded by a large railing which supported a covered gallery. The latter was presumably of wood and has perished. The portion of the railing that has survived consists partly of earlier pillars of the second century B.C. and partly of later pillars attributable to the Gupta period. The date of the earlier pillars is determined beyond doubt by a number of donative inscriptions recording gifts to the Chaitya at the noble temple by the wives of Indrāgnimitra and Rājan Brahmamitra, who presumably belonged to the Sunga dynasty. A Sanskrit inscription on a stone relief containing figures of the Brahmanical gods, Sūrya, Siva and Vishnu, records that in the reign of Dharmapāla, king of Bengal (*circa* 800 A.D.), a four-faced *lingam* was set up at the magnificent abode of the Lord of the Dharma—*i.e.*, Buddha. This document corroborates Hsüan-tsang's statement that both here and at other places the Buddhists and Saivas lived together on friendly terms.

Sarnath.—The first recipients of the Buddha's new doctrine were his five former comrades, who had followed him during six long years of severe austerity and who now resided at the Deer Park. The archæological excavations have brought back to view the spot, still occupied by a large stupa, where the Master was first received by these disciples and, on the site of the Deer Park itself, the spot where he actually preached his first sermon on the four Noble

Truths and the Aryan Eightfold Path; the Dharmarājikā stupa, which was enlarged by several later additions; an Asoka pillar, bearing his royal edict forbidding schism in the church; and numerous other structures, including six monasteries dating from the Kushāna and later periods. The temples included what is described as the Main Shrine and another entitled the Dharmachakra-Jina-Vihāra, which was built by Kumāradevī, the Buddhist queen of Govindachandra of Kanauj in the first half of the twelfth century A.D.

In the Gupta period Sarnath was the centre of an independent school of sculpture which owed its origin to sculptures imported from Mathura. Among them was a large-sized image of the Bodhisattva Gautama made in the third year of the reign of Kanishka. The Gupta sculptures include some of the finest specimens of ancient Indian Art; and three of them bear inscriptions, dated in the years 154 and 157 of the Gupta era in the reign of Budhagupta. The final destruction of this site was the work of Muhammad Ghori at the end of the twelfth century A.D. The Buddhists of Ceylon have built at Sarnath a fine temple, which they appropriately call the Mūla-gandhakutī-vihāra, as it was here that the first *vihāra* was built for the residence of the Master. This new *vihāra* already enshrines two or three deposits of authentic body relics of the Master and is visited by pilgrims from all Buddhist countries.

Kusanagara.—The scene of the Buddha's death has been identified with the ancient remains near Kasia in the Gorakhpur district. One of the sacred edifices that still remained intact when the Chinese pilgrims Fa-hsien and Hsüan-tsang visited this place was a temple containing a large image of the dying Buddha lying facing west. This image, which was carved at Mathura under the supervision of the Buddhist monk Haribala in the Gupta period, was

found and restored by Mr. A. C. Carlleyle. The stupa of the Parinirvāna, built by Asoka beside the temple, has not yet been brought to light. The one that has remained on the spot indicated dates from the Gupta period and revealed a deposit including a copper-plate inscription which definitely refers to the stupa as "the Parinirvāna Chaitya." The Great Stupa, which stood on the spot where the Buddha's body was cremated and where the cremated relics were divided among the eight chiefs, probably lies buried in a mound known as the Ramabhar, which still awaits systematic excavation.

Saheth-Maheth.—At Srāvastī (modern Saheth-Maheth, on the borders of the Gonda and Bahraich districts in the United Provinces) the Buddha performed the double miracle of rising into the air and, thus suspended, preaching his doctrine to six heretics. It was here, too, that the banker Anāthapindika constructed a monastery for the reception of the Master. The excavations carried out by the Archæological Department have revealed several religious edifices and Kushāna and later inscriptions which identify the remains in question with Srāvastī.

Sankisa.—From Srāvastī the Buddha ascended to the heaven of the thirty-three gods to preach his new doctrine to his dead mother and then descended to the earth at Sānkāsya. From the similarity of the names as well as from the existence of a large Asoka capital crowned with a statue of an elephant, Cunningham identified Sānkāsya with the ancient remains at Sankisa in the Etah district in the United Provinces. Trial excavations have been carried out on this site, but further operations are necessary.

Kosam-Kausāmbī.—Kausāmbī, an important city in ancient times, was the place where Buddha spent his ninth retreat. It was here that Hsüan-tsang wrote that he saw a contemporary sandal-wood image of the Master. In this neighbourhood is usually placed the story of the monkey that offered food to the Buddha. Some

authorities locate this last incident at Vaisālī, which the researches of the late Drs. Bloch and Spooner identified with Basarh in the Hajipur Sub-division of Muzaffarpur district in Bihar. With the help of inscriptions, some of which were discovered by himself, the writer of this chapter was able to confirm Cunningham's identification of Kausāmbī with the ancient remains at Kosam in the Allahabad district. The large fortified town, 30 li in circuit, which Hsüan-tsang saw is under exploration. One of the two Asoka pillars on this site was removed by Akbar to the Allahabad fort. The other had fallen down and has been re-erected.

Rajgir.—This place in the Patna district in Bihar was the site of Rājagriha, the resort of the Buddha after his great Renunciation, and where after his attainment of Buddhahood he subjugated an infuriated elephant. The site was carefully explored by Sir John Marshall in 1905-06. The principal landmarks, whose positions were then definitely ascertained, were the Gridhrakūta hill, the Pippala-vana house and the Sattapanni hall, at the last of which was held the first Buddhist conference to fix the text of the three Buddhist Pitakas. Five hundred Arhats, according to Fa-hsien, and one thousand according to Hsüan-tsang, took part in this council, which was presided over by Mahākāsyapa, supported by the two principal disciples of the Buddha.

Nālandā.—This place, one of the chief centres of Buddhist learning, flourished from about the fourth century A.D. to the end of the twelfth century, when its monasteries with well-stocked libraries were destroyed. Hsüan-tsang made two long sojourns here, and Nālandā also received a mission from China sent by the first Liang Emperor in the middle of the sixth century A.D. to collect Mahāyāna texts. Exploration of this site was begun in 1915 under the supervision of Dr. Spooner and continued later by Mr. J. A. Page and Mr. G. C. Chandra. The buildings so far revealed

occupy a large area more than 2,000 feet long by 700 feet in width, and consist of a series of about a dozen monasteries on the east and south sides and a row of large stupas and *chaitya* temples on the west side of a large open space. The main stupa No. 3 is the largest on the site, which was enlarged to its present size by successive additions. The temple No. 12, which must have been an imposing structure, is probably identical with the large brick temple, 300 feet high, built by a Gupta king, which was so much admired by Hsüan-tsang. Among the monasteries, monastery No. 1 shows proof of having been deserted and reoccupied several times. The earlier building on this site was, according to a copper-plate inscription found in its entrance chamber, built for Balaputradeva of Suvarnadvīpa or Sumatra in the reign of Devapāladeva (ninth century A.D.), king of the Pāla dynasty of Bengal. All these monasteries were constructed on nearly the same plan and were commodious buildings, some of them two or more storeys high. Removable antiquities were most abundant in monasteries Nos. 1, 9 and 11 and *chaitya* temple No. 12. Most interesting among these were stone and bronze images of the Buddha, the Bodhisattvas and Tārā, those in the latter material being in some cases set with rubies. There were also hundreds of seals belonging to "The monastery of the noble community of the monks of Nālandā" and numerous others, including those of the king Devapāladeva and of Gupta kings. A model bronze temple in the Bodh Gaya type and several figures of Brahmanical gods and goddesses also deserve mention.

Other Buddhist sites have received attention. Here it is only necessary to refer to the great monastery built round a cruciform temple of considerable size, which has been brought to light by excavation at Paharpur in the Rajshahi district in Bengal. This is one of the largest single monuments brought to light by excavation anywhere in India and is only a little smaller in size than the great

rectangular court around the Step Pyramid at Saqqara in Egypt. The temple, which stands on a lofty platform, has a pillared hall on each side and is surrounded by a circumambulatory passage. The plinth is decorated with thousands of terra-cotta plaques besides some sixty stone plaques, representing Buddhist and Brahmanical gods and goddesses and a vast variety of other subjects. The monastery was entered by a large gateway from the north, and had a triple chapel in the middle of each of the remaining three sides. The residential cells are about 200 in number. An interesting stone inscription of the late Buddhist period in Bengal, which was found at Nālandā and published by Mr. N. G. Majumdar, reveals the fact that a monk from Paharpur had made extensive donations for the construction and repair of religious edifices at that site and at Nālandā. One of the structures built by this monk at Paharpur was a temple of the Buddhist goddess Tārā, and this temple has been brought back to view and identified. The excavations on this site were superintended by Professor D. R. Bhandarkar and Messrs. Banerji, Dikshit, Chandra and Majumdar.

DAYA RAM SAHNI.

APPENDIX TO CHAPTER III (*b*).

ASOKAN INSCRIPTIONS.

No. *Title.*	*Site.*	*Reference.*
The Rock Edicts.		
1. I. The Girnar Rock.	1 m. E. of Junagarh in Kathiawar.	1-26, *Corpus Inscriptionum Indicarum*, Vol. I.
2. II. The Kalsi Rock.	Kalsi in Chakrata tahsil of Dehra Dun district in the United Provinces.	*Inscriptions of Asoka*, by E. Hultzsch, formerly Epigraphist to the Government of Madras (Clarendon Press, 1925).

No.	*Title.*	*Site.*	*Reference.*
3.	III. The Shahbazgarhi Rock.	9 m. from Mardan in Peshawar district in the North-West Frontier Province.	
4.	IV. The Mansehra Rock.	Headquarters of tahsil in the Hazara district of the North-West Frontier Province.	
5.	V. The Dhauli Rock.	Village in Khurda subdivision of Puri district, Orissa.	
6.	VI. The Jaugada Rock (duplicate of Dhauli).	Berhampur taluk of Ganjam district, Madras.	
7.	VII. The Bombay-Sopara Fragment.	Sopara in Bassein taluk of Thana district, Bombay.	
	The Pillar Edicts.		
8.	I. The Delhi-Topra Pillar.	On roof of citadel of Firoz Shah, S.E. of modern Delhi.	
9.	II. The Delhi-Mirath Pillar.	On the Ridge, N.W. of modern Delhi.	
10.	III. The Lauriya-Araraj Pillar.	20 m. N.W. of Kesariya in Champaran district, Bihar.	
11.	IV. The Lauriya-Nandangarh Pillar.	15 m. N.N.W. of Bettiah in Champaran district, Bihar.	
12.	V. The Rampurva Pillar.	32½ m. N. of Bettiah in Champaran district, Bihar.	*Annual Report*, A.S.I., 1907-08, pp. 181-8.
13.	VI. The Allahabad-Kosam Pillar.	Inside fort at Allahabad.	
	Minor Pillar. Inscriptions.		
14.	I. The Sanchi Pillar.	In Bhopal State, 5½ m. from Bhilsa.	

No. *Title.*	*Site.*	*Reference.*
15. II. The Sarnath Pillar.	3½ m. N. of Benares.	
16. III. The Rummindei Pillar.	3 m. N. of Bhagwanpur, a tahsil headquarters in Nepal, and 5 m. N.E. of Dulha in the British India district of Basti in the United Provinces.	
17. IV. The Nigali Sagar Pillar.	1 m. from the village of Nigliva, which is 13 m. N.W. of Rummindei (see No. 16).	
Minor Rock Inscriptions.		
18. I. The Rupnath Rock Inscriptions.	14 m. W. of Sleemanabad in Jubbulpore district, Central Provinces.	
19. II. The Sasaram Inscription.	Headquarters of sub-division in Shahabad district, Bihar.	
20. III. The Bairat Rock Inscription (version No. 19).	1 m. N.E. of Bairat, headquarters of tahsil in Jaipur State, Rajputana.	*Archæological Remains and Excavations at Bairat*, by Rai Bahadur Daya Ram Sahni, C.I.E. (Dept. of Arch. and Hist. Research, Jaipur State, April, 1937).
21. IV. The Calcutta-Bairat Rock Inscription.	Now with Asiatic Society of Bengal in Calcutta.	
22. V. The Maski Rock Inscription (version of No. 18).	Near Maski, in Lingsugur taluk of Raichur district, Nizam's Dominions.	
23-25. VI, VII, VIII. Rock Inscriptions in the Mysore State.	Near Siddapura, Brahmagiri and Jatinga-Ramesvara, between 14° 47′ and 51′ N. and 76° 51′ E. in Chitaldrug district, Mysore.	

No.	*Title.*	*Site.*	*Reference.*
26.	IX. The Barabar Hill Cave Inscriptions.	15 m. N. of Gaya in Bihar.	
27-28.	Gavimath and Palkigundu Inscriptions (another version of the Minor Edict, No. 18, etc.).	Near Kopbal (Koppal), headquarters of district in the Jagir of Nawab Salar Jung Bahadur in Hyderabad, Deccan, about 55 m. S.S.W. of Maski (No. 22).	Hyderabad Archæological Series, No. 10, *The Gavīmaṭh and Pālkīguṇḍu Inscriptions of Aśoka*, by Professor R. L. Turner, M.C., M.A., Litt.D. (H.E.H. The Nizam's Government, 1932). Sketch map Plate XVIII shows sites of Asokan inscriptions in Southern India. See Mr. C. E. A. W. Oldham's note on the geographical distribution of the Southern Asokan inscriptions in *Indian Antiquary*, 1932, Vol. LXI, pp. 39-40.
29-41.	The Thirteen Rock Edicts (version of No. 1, 2, 3, 4 and 18).	Near village Erragudi (Yerragudi) (15° 12′ N. and 77° 39′ E.), Kurnool district, Madras; 8 m. N.E. from Gooty.	Photograph in Telugu magazine *Bhārati* (Madras, September, 1929). *Arch. Sur. India, Annual Report*, 1928-29, pp. 161-7. Notes by Rai Bahadur Daya Ram Sahni. *India in* 1928-29, by J. Coatman (Calcutta, Government of India Central Publication Branch, 1930), pp. 364-5. *Indian Historical Quarterly*, Vol. VII, 1931, pp. (737) 817 ff.,

No.	*Title.*	*Site.*	*Reference.*
			by Dines Chandra Sircar, with transcriptions of the inscriptions. *Idem*, Vol. IX, 1933, pp. 113-20, by B. M. Barua, with transcription and translation. *Idem*, Vol. XIII, March, 1937, pp. 132-6, by B. M. Barua.

(c) THE NORTH-WEST FRONTIER AND HELLENIC CIVILIZATION

Taxila and Mathura

The opening of the mysterious topes by the foreign generals of Ranjit Singh in the Punjab and by C. Masson in Afghanistan aroused vivid interest in the antiquarian remains of those hitherto forbidden regions. The coins extracted from those ancient shrines revealed the Greek names of numerous rulers, nearly all of them unknown to written history, who must once have held sway on the banks of the Indus and its tributaries. Coins of a less refined and less classical type, gradually degenerating into quite barbarous specimens, clearly showed how those champions of Hellenic culture finally succumbed in their struggle with the warlike leaders of various foreign tribes, provisionally described as 'Indo-Scythic,'

but differentiated by more minute research into Sakas, Parthians and Kushānas.

Subsequent explorations in the north-west, particularly in the tract of country stretching from the right bank of the upper Indus to the surrounding mountain range which from Vedic times was known by the name of Gandhāra, brought no less startling evidence of the marked Hellenistic influence which characterized the ancient art of that province. Extensive ruins of Buddhist monasteries, perched on isolated rocks and scattered over the plains of this fascinating region, yielded incredible quantities of sculptures in which the story of Buddha's life was told in strangely classical forms. In these delicate reliefs the figure of the Tathāgata, his body enveloped within the ample folds of the monk's robe and his head encircled by a nimbus, generally occupied the centre of the composition. Detached images, too, of the Buddha in his monastic garb came to light in astonishing numbers, side by side with other graceful figures believed to represent the same personage as a Bodhisattva or, in other words, as Prince Siddhārtha.

The somewhat exaggerated æsthetic value ascribed to these so-called 'Græco-Buddhist' or 'Gandhāra' sculptures on account of their Western affinities soon led to an intense search for these art treasures, and the museums of Lahore and Calcutta were enriched by large collections of sculptures, often of unknown origin; but irreparable damage was done to the ancient sites and much valuable evidence was lost for ever.

A new era in the archæological exploration of Gandhāra was inaugurated by the excavations conducted by Sir John Marshall in 1903, on the site of the ancient Pushkalāvatī (now Charsadda) on the left bank of the lower Swat. For though nothing of outstanding importance was brought to light, they were the first excavations in India to be carried out on modern scientific lines, and they set a

standard of accuracy and careful observation which has since revolutionized this branch of the Department's activities.

After the creation of the North-West Frontier Province in 1901, this area was converted into a separate archæological circle under Dr. D. B. Spooner, an oversea scholar of great ability, who continued the exploratory work on the same strictly scientific lines. A mound near Sahri Bahlol, selected by him for exploration, yielded so large a number of well-preserved sculptures, including several novel subjects, that the museum newly founded at Peshawar became at once one of the principal depositories of Gandhāran art.

Among the numberless ancient sites in the new circle, the ruined monastery perched on the romantic rock of Takht-i-Bahi had enjoyed special repute from the days when in 1871 honest Sergeant Wilcher was deputed by the Punjab Government to examine its half-buried remains. This celebrity was due partly to its picturesque and accessible position, some nine miles to the north of Hoti-Mardan, partly to the circumstance that many pieces of sculpture preserved in the Lahore Museum or in kindred institutions in Europe were believed to come from that spot. A site so frequently explored and despoiled could hardly have been expected to retain any mysteries or art treasures, but Dr. Spooner showed the true insight of the scientific explorer, when after finishing with Sahri-Bahlol he directed his attention to the crest of Takht-i-Bahi. The results of his careful researches exceeded even his expectations; for they showed that the diggings of 1871, carried out *manu militari*, had left many an important monastic building untouched and numerous sculptural remains concealed among the thick layer of débris. When three years later Dr. Spooner's successor, Mr. H. Hargreaves, completed the clearing of the famous convent on the rock, there were still astonishing discoveries to be made, including a covered staircase, a courtyard containing three richly ornamented

stupas and the remains of six colossal Buddhas, originally standing to a height of no less than twenty feet.

These and other finds, however, were far surpassed in interest by a discovery made in 1909 in the immediate vicinity of the capital of the Province. From the itineraries of the Chinese pilgrims it had long been known that outside Purushapura (the present Peshawar) there once stood a stupa and monastery, celebrated throughout the whole Buddhist world as the most magnificent in Jambūdvīpa. Their foundation was ascribed to Kanishka, the war-like monarch of the Kushāna dynasty and, next to Asoka, the greatest patron of the Good Law. It was Mons. Alfred Foucher who, following Hsüan-tsang's footsteps through the district of Gandhāra, first recognized the remains of these famous monuments in two imposing mounds of débris outside the Ganj Gate of Peshawar city, but as his identification was mainly based on the position and configuration of the mounds, which were known by the modern name of Shahji-ki-Dheri, it could not be regarded as more than a hypothesis, until verified by actual excavation.

It fell to Dr. Spooner to undertake this task. The eastern mound, supposed to mark the site of the royal pagoda, was naturally the first to claim attention. The work, commenced in January, 1908, proved unusually difficult. The two mounds, situated as they were in the immediate neighbourhood of a large city, had for many centuries been exploited for building materials, and the deplorable effect of these depredations soon became apparent: the brick walls of the ancient monument concealed in the mound had been largely destroyed and removed, leaving almost nothing but a vast accumulation of earth. Here and there bits of walling were found; but these puzzling remains did not afford any clue as to the position and nature of the buildings, and by April, when increasing heat brought the work to a stop, the explorer had reluctantly to admit

that, notwithstanding all his labours, 'nothing had been recovered to determine whether it was Kanishka's *chaitya* or not.' He was not, however, to be deterred, and a substantial subsidy provided by the Director-General of Archæology out of Imperial funds enabled him to renew his attempt in the following cold season. This time his perseverance was rewarded. A patient search on the southern side of the supposed stupa mound revealed a wall covered with stucco, and 'sufficiently well preserved to show the original design of its decoration, namely, a line of seated Buddha figures separated one from another by Indo-Corinthian pilasters.' From the unusual size of the figures it was inferred that the wall undoubtedly formed part of a sacred shrine of imposing dimensions, and in the event it proved to belong to the southern projection of the basement. From that point on the plan of the great stupa was rapidly followed up, and one by one its other projections and corner towers were laid bare until it became possible to determine the exact centre of the basement. This is the spot at which the sacred deposit is generally buried, and the stupa of Kanishka proved to be no exception to the rule. A pit sunk at this point brought to light a small relic chamber at a depth of two feet below the level of the pavement surrounding the stupa, and in it a relic casket of gilt bronze cunningly decorated with seated Buddhas, garland-carriers and geese. Prominent amid this mixture of Indian and Hellenistic motifs stood the quaint figure of a Kushāna king clad in his foreign garb, well-known from the coinage of the period. That this royal personage was no other than the great Kanishka, the reputed founder of the famous pagoda of Purushapura, was recorded in a Kharoshthī inscription incised on the casket, and this epigraph also mentioned the king's master of works (*navakarmi*) Agisala—a name which evidently represented the Greek 'Agesilaos.'

It is not surprising that such a brilliant discovery, reached by

patient and logical investigation, should have created unusual interest. It became a matter of public controversy how to dispose of the tiny piece of bone which, enclosed within a six-sided crystal reliquary, had been found within the bronze casket. This the Government of India wisely decided to make over to the Buddhists of Burma. The casket itself was deposited in the Peshawar Museum. Its unusual decoration and curiously clumsy or debased workmanship, its somewhat enigmatic inscription, and, above all, the presence of the Buddha figure both in relief and in the round (the latter on the top of the lid)—all this has made the relic-casket of Kanishka one of the most fascinating antiquarian objects found on Indian soil.

The excavations carried out in the Frontier Province were of value, since *inter alia* they supplied for the first time reliable information as to the history and architecture of the *sanghārāmas* (monasteries) and as to the manner in which the sculptural decoration of chapels and *chaityas* was treated. Here let us remark parenthetically that in Sir John Marshall's opinion it has now become quite clear that the self-contained, walled-in and more or less rectangular *sanghārāma* was evolved in the north-west, probably during the early Kushāna period, and spread thence to the Gangetic plains, Central India, etc., where it displaced the old open type of *sanghārāma* with its many detached and relatively small buildings. That the new type of defensible *sanghārāma* should have been evolved in the north-west was natural enough, considering how unsettled and turbulent that area always was and that an open monastery of the earlier type must have been constantly exposed to danger from robbers or hostile invaders; it was indeed indispensable that some form of fortification should be devised for the monasteries in that part of India.

Valuable in their way as were the explorations among the

Buddhist remains on the Frontier, it was at Taxila that Sir John Marshall's long and comprehensive campaign, extending over more than twenty years, yielded the most instructive results, and to a large extent revolutionized our knowledge of the cultural history of the North-West between the seventh century B.C. and the fifth century A.D., and of the changes introduced by the successive conquerors. The following paragraphs are based on notes which I owe to the courtesy of Sir John Marshall himself (see Plate I).

Of the date when the earliest city (on the Bhir Mound) was founded, we have no precise evidence, but we cannot be very far wrong if we place it about the seventh century B.C.—well on in the Iron Age and long after the Vedic 'village-state'; still longer after the eclipse of the Indus civilization. In this earliest city and in all subsequent settlements until the coming of the Bactrian Greeks, the planning of streets and houses is very irregular, as it still is in typical Indian towns and villages throughout the north-west. In the first city, too, the houses are built of very rough stone masonry of the rubble variety; so rough as to suggest that the people had had little previous experience of such stonework. Then, in the second city (which is certainly anterior to Alexander the Great and may date from the period of Achæmenid rule), we see the planning just as irregular, but the masonry much improved. And in the third city, which dates from Mauryan times (third century B.C.), we see this improvement still more marked, the rubble stonework being as neat and compact as it was possible to make it without the aid of lime mortar. This change in the character of the Mauryan buildings is accompanied by a still more noticeable change in the character of the minor antiquities—mainly domestic utensils, ornaments and toys—found inside them. In the two earliest settlements the only objects that show any trace of artistic feeling are those which have either been imported from abroad or made by foreigners at Taxila

Scythic origin, displaced the purer Scyths in the course of the third century B.C.

What has now been made abundantly clear at Taxila is that, although there was very little Indian art there after the downfall of the Mauryas, there was also relatively little foreign art until the first century A.D., when the Parthians had supplanted the Sakas. How popular Greek and Græco-Roman art then became may be judged from the fact that, of the vast number of minor antiquities recovered in the Parthian city, fully three-quarters are classical in character. Some of these were, no doubt, brought by way of trade from Western Asia or the Mediterranean area, but the majority were manufactured at Taxila itself and, like the buildings of the period, which are almost invariably enriched by some classic features —pillars, pilasters, cornices, or mouldings—they show how widespread and deeply rooted among the Parthians was this vogue for Hellenistic culture. Evidently the epithet of 'Philhellene' found on the coins of almost every Parthian King was no meaningless boast. To judge by their city at Taxila, as well as by the evidence from Dura-Europus and other sites in Western Asia, the Parthians were very far from being the wild horsemen of the steppes that have so often been pictured for us by Roman and modern historians; for not only were their cities admirably planned and fortified and their houses well built and comfortable, but they must have had a first-rate organization for trade and commerce throughout their vast domains, and they were certainly accustomed to a degree of luxury in their daily life hardly inferior to that found in the provinces of the Roman Empire.

Incidentally it may be observed that much of the Græco-Roman influence apparent in the Gandhāra School of sculpture was due to the Hellenizing tendency of the Parthians, though some of it may have been derived from their predecessors in the north-west, the

Græco-Bactrians and Sakas. In this connection it is also to be observed that the testimony furnished by finds in the Parthian city in Sirkap goes to show that in the first century A.D. the Gandhāra School was still in its adolescence and did not reach its maturity until after the north-west had passed under the yoke of the Kushānas.

The discoveries made on these several city sites have been supplemented by extensive excavations at a number of Buddhist monasteries or other religious edifices in the neighbourhood. One of the most interesting of these is the very classic-looking temple at Jandial, some distance outside the north gate of Sirkap, which appears to have been a Sun or Fire temple. It dates from about the beginning of the Christian era and, like a Greek temple, contains a *pronaos* (portico), *naos* (interior chamber) and *opisthodomos* (chamber at the back); but between the last two chambers there is a solid mass of masonry with deep foundations, which probably supported a staged tower, or small *ziggurat*, rising above the flat roof of the structure. In front of the *pronaos* and in front of the vestibule leading to it are two pairs of massive Ionic columns, but in place of the usual peristyle of columns there is a stone wall pierced by twenty windows, which suffice to admit ample light into the interior.

Other important groups of buildings excavated by Sir John Marshall are those comprised in the Buddhist settlements at the Dharmarājikā Stupa, Giri, Kalawan, Mohra Moradu, Jaulian, Pippala and Bhamala. The value of these excavations could not be easily over-stated. For one thing, they give us a singularly lucid picture of how the Buddhist monastery developed in this part of India. We see how at first its nucleus was the open-air stupa with a variety of detached buildings round about in which the monks could worship, sleep, bathe, etc. This was the type of monastery which was found throughout India up to the close of the first cen-

tury A.D. Then we see how the need of defence led to the erection of fortified enclosures containing rectangular courtyards with cells for the monks or chapels inside them and stupas of much smaller dimensions than had previously been erected. Later, as time went on, we can see how the growing luxury of the monastic communities led to the addition of kitchens and dining-rooms to the monasteries. And later again—in the early mediæval period—we see how the ever-increasing number of monks, coupled with the increasing danger to which they were exposed from foreign invasion, particularly from the Huns, led to the construction of a specially strong fortress at Giri in which the monks from scores of monasteries could seek refuge and from which, in case of need, they could find a ready escape into the Murree Hills. Finally, we witness in the weapons of war and the skeletons lying about amid the burnt-out ruins of these monasteries the catastrophe which overwhelmed them all towards the close of the fifth century A.D. at the hands of the White Huns.

In the second place, the excavation of these Buddhist remains has disclosed to us many distinctive types of architecture and building construction as well as the sequence in which they followed one upon another; so that with the help of this new material we are now able to date the monuments in this locality with a measure of accuracy that was previously undreamt of. In like manner, these excavations have not only given back to us a magnificent series of sculptures ranging in date from the first to the fifth century A.D., but they have also supplied us with the required data for arranging them in chronological order. One of the results of this is that we now have to recognize the existence in the fifth century A.D. of an important school of sculpture quite distinct from the Gandhāra School, though reviving some of its traditions. This later school is also well represented at Hadda and other sites in Afghanistan; and

for this reason Sir John Marshall has, in consultation with the French Mission in Afghanistan, named it provisionally the "Indo-Afghan" School. This school must have been at its zenith a few years before the Hun invasions, since many of its finest pieces were found in a condition which showed that they had not long been executed when they were buried in the ruins of the monasteries; and inasmuch as the Gandhāra School had ceased to function several generations before them, it seems clear that a considerable interval of time must have intervened between the two schools. A few of the main features which distinguish these schools are:

(*a*) Whereas schist and other soft stones were chiefly used by the sculptors of the Gandhāra School, only clay and lime plaster were used in the Indo-Afghan School.

(*b*) Scenes from the life of the Buddha or from the Jātakas, which are common in the earlier school, are never found in the later, their place being taken by images of the Buddha with attendant Bodhisattvas and *devas*, and sometimes with portrait figures of the donors and of a monk, presumably the abbot of the monastery where the reliefs were consecrated.

(*c*) As a result of the attention concentrated on these figures the ideal types of Buddha, Bodhisattvas and *devas* evolved in the Indo-Afghan School, and the portraits also of monks and laymen, are far in advance of anything of the kind achieved by the Gandhāra School and unsurpassed even by the finest products of Gupta art.

(*d*) On the other hand, the facility with which clay and plaster could be handled and countless replicas turned out with the help of moulds led inevitably to the commercializing of this art, so that side by side with masterpieces of great beauty and individuality we find many quite third-rate and insignificant reliefs, which are clearly the handiwork of petty craftsmen rather than of artists.

The above are some of the most outstanding results of Sir John

Marshall's labours at Taxila; but this account should not be closed without mentioning the large and varied collection of gold and silver jewellery, personal ornaments, domestic utensils, implements and weapons which have been recovered in the course of his excavations. These antiquarian treasures have been housed in the local museum and constitute the only collection of its kind existing in India. The coins too deserve a more than passing notice, for they number over ten thousand and comprise many unique or rare specimens and several issues of hitherto unknown rulers.

The city of Mathura (Muttra), situated on the right bank of the Jumna, is nowadays famous as a great centre of the worship of the divine herdsman Krishna. The sculptural remains, however, which have been produced in such amazing numbers by the ancient mounds wherein the district abounds, pertain but rarely to the Krishna cult. They are generally either Buddhist or Jain, and the former excel both in quantity and in archæological interest.

Certain pieces of these Buddhist sculptures, such as the Silenus discovered in 1836 by Colonel Stacy and since preserved in the Indian Museum, Calcutta, the Bacchanalian group found by Mr. Growse in 1873-4 at Pali Khara, and the Hercules with the Nemean lion now at Calcutta, early attracted notice. It was thought at the time that the Western character so clearly expressed in these sculptures was to be ascribed to a more direct Hellenistic influence than that noticeable in the Græco-Buddhist school of Gandhāra.

From the discoveries at Taxila it is now evident that the influence in question came from the deluge of Græco-Roman art which followed in the wake of the Parthians. It is not, however, this debased classical art that is most typical of the Mathura school of sculpture. The numberless fragments of railings and gateways which once adorned the relic-shrines of Mathura (none of which unfortunately has survived the passage of time) exhibit the same

architectural and decorative features as are familiar in the famous Buddhist monuments of Bharhut and Sanchi, and it is abundantly clear that it was from this source that the artists of Mathura drew their main inspiration.

Sir Alexander Cunningham, the great pioneer of Indian archæology, paid considerable attention to the remains of Mathura, particularly to the site of the Katra. It was well known that the mosque which now occupies the centre of this enclosure was raised by Aurangzeb on the ruins of a magnificent temple dedicated to Vishnu under the name of Kesava Deva. Cunningham's explorations proved that in the first centuries of our era a Buddhist sanctuary stood on this same spot.

Among other early explorers of the Mathura district the name of F. S. Growse deserves special mention. He not only examined a number of mounds from which he extracted numerous sculptures, but was also the founder of the first local museum—the very ornate building which had originally been intended as a rest-house for the use of the local Indian gentry. Though not altogether suited for a museum, it served its purpose well enough, and the antiquities housed in it were at least sheltered and easily accessible.

It was due, however, to the enthusiasm of a local antiquarian, Rai Bahadur Pandit Radha Krishna, that the Mathura explorations received their greatest impetus. Under the auspices of the Archæological Department the Pandit undertook to collect Buddhist images, erroneously adapted to Hindu worship, as well as sculptured and inscribed stones which his keen eye noticed either let into the wall of some modern building or put to some other practical purpose. The funds placed at his disposal by the Director-General of Archæology, coupled with his own practical sense and power of persuasion, enabled him to acquire a considerable number of valuable sculptures for the Mathura Museum.

The first acquisition of this kind was a small stupa drum, carved with eight scenes of the Buddha legend, which was being used as a receptacle of the sacred *tulsi* or basil plant (*Ocymum sanctum*) in a Hindu shrine at the Dhruv Tila. It was acquired for the Museum in December, 1907.

During the year 1908 several pieces of great antiquarian interest were added: an early inscribed Buddha image from the Katra site, which an ignorant Brahman had appropriated for domestic worship under the name of Rāma's *guru* Vasishtha, a Nāga statue with a dedicatory inscription dated in the reign of Huvishka and a delicately carved architrave of a gateway. The colossal Yaksha statue, first noticed by Cunningham in the village of Parkham, fourteen miles south of Mathura, was likewise added to the collection.

In June, 1910, Pandit Radha Krishna noticed two strangely shaped stone pillars in the bed of the Jumna river near the suburb of Isapur, where they had become exposed owing to the fall of the river in the hot season. Not without difficulty he extracted them from the water and removed them to the local museum. They proved to be sacrificial posts (*yūpa*) fashioned in accordance with the prescripts of the Brahmanical ritual. One of them bore an inscription, dated in the year 24 and in the reign of Vāsishka, thus establishing that a king of this name had intervened between the Kushāna rulers Kanishka and Huvishka. The remarkable success attending Pandit Radha Krishna's exertions fully justified Sir John Marshall in placing funds at his disposal for more systematic research. One site selected by the Pandit for excavation was a flat mound covered with jungle near the village of Mat, some nine miles to the north of the city of Mathura. The finds made here proved of unusual interest. Chief among them was a statue of Kanishka, the warlike king of the Kushāna dynasty, showing him in his curious northern garb—a long coat and enormous boots—and

armed with a sword and ornamental mace. The statue is headless, but an inscription mentioning the king's name and titles leaves no doubt as to his identity. Two more inscribed statues in the same dress were recovered; although they are badly damaged and the inscriptions fragmentary, it is evident that they, too, must represent princes of the Kushāna dynasty.

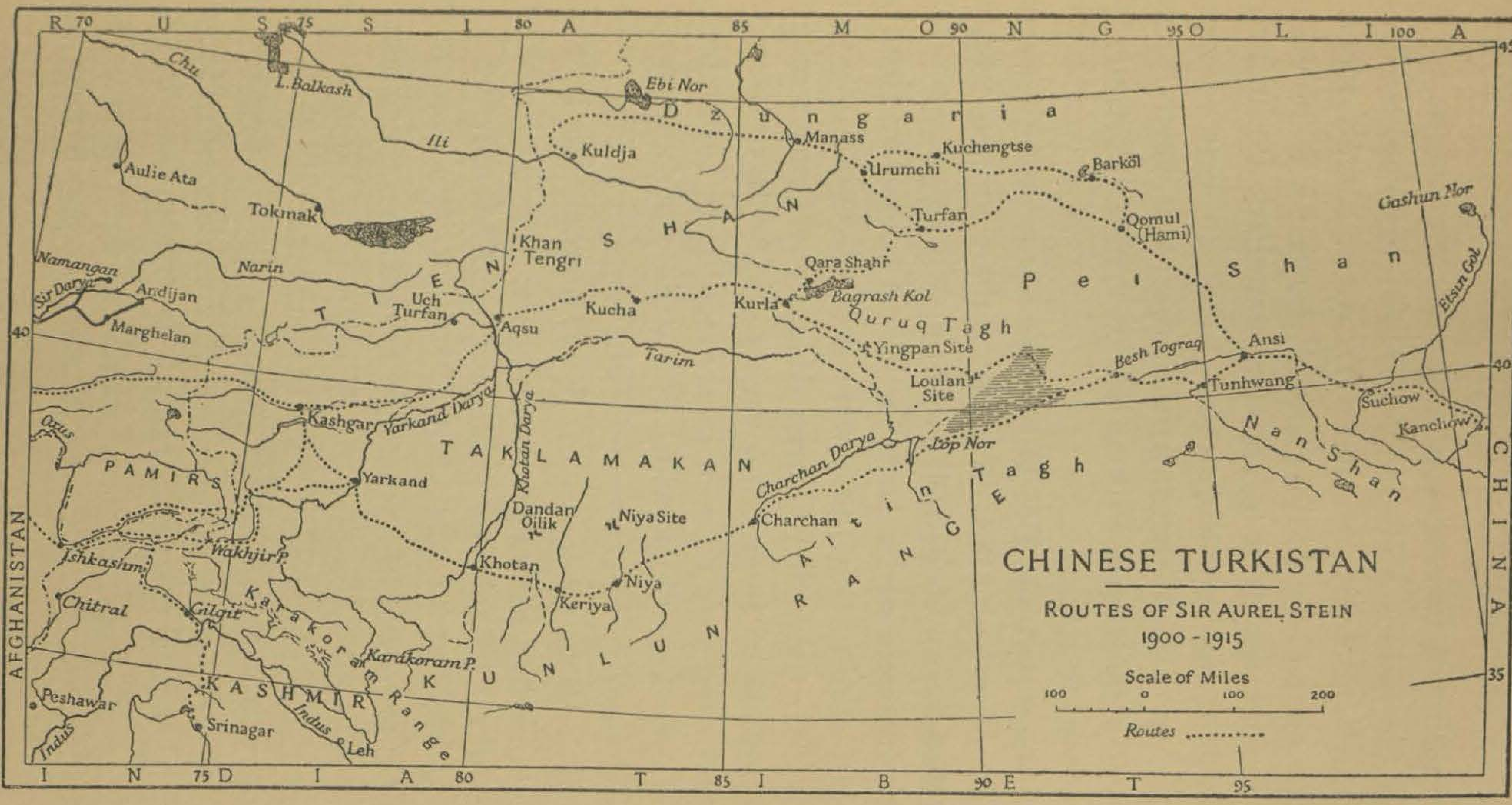
Pandit Radha Krishna's indefatigable activity carried on during a number of years until his lamented death in 1931 resulted in such a rapid growth of the local collection that the building converted into a museum by Mr. Growse soon proved inadequate, and in 1919 the Government of the United Provinces decided on building a new and altogether more suitable museum.

Let us conclude this chapter by recording that the new Museum was opened in 1933. It was at the special wish of Pandit Radha Krishna that it was named after Lord Curzon, who during his Viceroyalty had done so much to promote archæological research in India.

J. Ph. Vogel.

(*d*) ARCHÆOLOGICAL EXPLORATION IN CENTRAL ASIA

Chinese Turkistan, the vast region of Central Asia where the operations here recorded were carried out, has never belonged to India politically. But it has played a great part in the expansion of Indian cultural influences to the Far East. Its very arid climate has preserved many relics of the ancient civilization developed under those influences. In the exploration and research which revealed that civilization India claims a large and quasi-pioneering share. The credit for this is due largely to the enlightened interest in these labours of the Government of India, and to the effective support of the Archæological Department under Sir John Marshall's direction.



CHINESE TURKISTAN

ROUTES OF SIR AUREL STEIN 1900 - 1915

The merit of first recognizing the importance of Chinese Turkistan for Indian archæological research belongs to that very distinguished Indologist, the late Dr. A. F. Rudolf Hoernle. In 1889 Lieutenant (later Major-General) Bower, I.A., on his passage through Kuchā, acquired leaves of a birch-bark Pōthī in Sanskrit, accidentally discovered with other MSS. at a ruined site. Dr. Hoernle, when carefully editing the medical text which it contained, proved that it had been written before the sixth century A.D. and imported from India.

The interest which Dr. Hoernle's efforts aroused led to the acquisition of other MSS. in early Indian scripts, fragments of Sanskrit Buddhist texts as well as writings in an unknown language. They were recognized by Dr. Hoernle as belonging to the find at Kuchā. In addition to these were the collections transmitted in 1895-7 by Mr. (now Sir) George Macartney from Kashgar, comprising numbers of fragmentary texts said to have been found in sand-buried sites near Khotan in the southern Tārīm basin. The great majority were block-prints in a variety of 'unknown' scripts. Additional interest was attracted when part of a birch-bark MS. containing a Prakrit version of the *Dhammapada* in Kharoshthī script, acquired at Khotan in 1893 by the ill-fated French traveller M. Dutreuil de Rhins, was published by M. Senart, while another portion of this MS. reached the Russian Academy of Sciences through M. Petrovski, the Russian Consul-General at Kashgar.

Other indications pointed to Khotan as a promising field for archæological exploration. The Macartney collections comprised terra-cotta figurines, fragments of stucco reliefs, engraved seals and other antiques, displaying unmistakable evidence of Hellenistic art influence as found in the sculptures of Gandhāra. Vague reports received at Kashgar of finds made in the Taklamakān desert prompted systematic excavation. An account, if brief, of a visit

paid by Dr. Hedin to one of the desert sites supplied in 1897 another incentive. In that year the plan of systematic exploration in the Khotan area was first formed by me, and discussed with fellow-scholars in Europe. In 1898 definite proposals were made by me for my first Central Asian expedition. The field-work which fell to my lot from 1900 to 1916 on three successive Central Asian expeditions, combining geographical survey with archæology, was the result of the freedom secured to me by deputation from educational duty in India, and latterly after my appointment to the Archæological Survey by periods of special duty, and all through of the generous support accorded by the Government of India. On all three journeys, extending over a total of some seven years, my efforts were aided by well-trained Indian surveyors deputed with me by the Survey of India.

Expedition of 1900-01

Before the close of May, 1900, I started from my Kashmir base. The route followed led across passes still deeply covered with snow, through Gilgit to the Hindukush chiefship of Hunza. In this ethnographically and linguistically interesting territory, as well as in Gilgit, remains dating from Buddhist times were examined. Trying marches up the Hunza river gorges, practicable then only on foot, brought us by the end of June across the Kilik pass (15,800 feet) into Chinese territory at the head of the Tāghdumbāsh Pamir. The plane-table survey there started by Sub-Surveyor Ram Singh, together with astronomical observations and triangulation by theodolite, was continued right through our journey. Wherever high ground in the mountains and atmospheric conditions permitted, it was supplemented by photogrammetric work of my own. From the Wakhjīr Pass (16,200 feet) to the west the head of the Āb-i-Panja

valley was visited near the great glaciers forming the source of the Oxus. Descending the Tāghdumbāsh Pāmīr eastwards to Tāsh-kurghān, it became possible to clear up the ancient topography of Sarīkol by identifying the localities which the great Chinese pilgrim Hsüan-tsang mentions when passing here (649 A.D.) on his way back from India. After useful survey work along the great glacier-clad range, Ptolemy's Ἴμαος, culminating in peaks rising above 24,000 feet, a descent through the gorges of the Gez river brought us by the close of July to Kashgar. The personal influence and the respect enjoyed by my host Sir George Macartney among all Chinese officials of the 'New Dominion' secured all needful assistance for my proposed explorations. In my interviews with cultured Chinese officials I found my references to Hsüan-tsang's travels and the sacred places he had visited in the Tārīm basin singularly helpful.

After examination of the remains of the Buddhist period traceable in the vicinity, I left Kashgar on September 11th for Khotan. Following to Yarkand an unsurveyed route past the desert shrine of Ordam Pādshāh, and moving thence by the caravan track along the southern edge of the Taklamakān sands, I became acquainted with the characteristic physical conditions of the great wastes through which trade from the Oxus region and the west passed to Khotan and to China since ancient times. Stretches of ground strewn with pottery débris strikingly illustrated the destructive effect of wind erosion on dry alluvial soil. The observations here made, together with information gained at intervening oases, raised grave doubts about the genuineness of numerous manuscripts and block-prints in 'unknown characters' which were alleged to have been found at sites north of the caravan track; but on approaching the Khotan oasis it was interesting to find a curious desert site described by Hsüan-tsang clearly recognizable by a legend still clinging to a Muhammadan shrine.

On reaching Ilchi, the present chief town of the Khotan district, definite evidence was obtained of the practice of forgery of 'old books' and possibly of other 'antiques.' This made it particularly important to obtain specimens of antiquities from distant sites in the desert northward, through small parties of treasure-seekers accustomed to visit them. Their return could not be expected before a month. The interval was utilized for an expedition into the high K'un-lun range due south of Khotan, until then practically unexplored. In spite of the very difficult nature of the ground and the increasing winter cold, it became possible to map for the first time the deep-cut gorges holding the upper course of the Yurung-kash river and the great glacier-clad mountain range which rises above it to peaks close on 22,000 feet, dividing the Tārīm basin from the Aksai-chin plateau of north-western Tibet.

The weeks following the month's survey work saw me occupied with the examination and survey of ancient localities within the Khotan oasis. Specially important was the site of the ancient capital at the hamlet of Yōtkan, clearly indicated by Hsüan-tsang's description. Most of the small antiques previously collected from Khotan had been obtained here in the course of gold-washing operations carried on for years in 'culture strata' over which irrigation, aided by wind-carried fine sand from the desert, had deposited thick layers of silt or 'alluvial loess.' A considerable collection of interesting terra-cotta figurines, small relievos in metal and stone, engraved seals showing the influence of classical art, etc., was acquired on the spot.

On December 7th my winter campaign in the desert was started by setting out for a distant site to the north-east. The treasure-seeking party that had brought from it specimens of miscellaneous small antiques knew it as Dandān-oilik. At the oasis of Tawakkēl, three marches down the Khotan river, stringent instructions issued

by P'an Tajên, the 'Amban' of Khotan, made it possible to raise labour for the intended excavations, in spite of the villagers' reluctance to venture far into the desert. Throughout my explorations in the Tārīm basin and beyond, that very learned and highly respected Mandarin was to prove an ever-helpful patron. Five marches on foot across bare sand-dunes stretching eastwards brought us to where remains of structures just emerging from the drift sand amidst shrivelled trunks of trees marked the site of an abandoned settlement.

The structures, of timber and wattle, were badly decayed, and, where the cover of sand was slight, showed signs of having been burrowed into by treasure-seekers. In spite of the damage thus done, abundant finds and observations of interest rewarded the excavations of a strenuous fortnight. Almost all the ruins proved to be small Buddhist shrines or else modest attached monastic dwellings. The former were recognizable by tempera paintings of Buddhas or Bodhisattvas, covering what survived of cella and circumambulatory passage walls. Remains of stucco images within represented objects of Buddhist worship, their style clearly reflecting derivation from Græco-Buddhist art. In some shrines well-preserved panels of wood lay as deposited by the last worshippers. Some, showing scenes from local legends recorded by Hsüan-tsang, presented special interest.

Votive offerings, too, were the detached Pōthī leaves of paper bearing Brāhmī characters, found at the foot of stucco bases once bearing images. The Sanskrit text proved them to be Buddhist canonical writings, like the more extensive manuscript finds made in the sand-filled basement room of a monastic dwelling. Single leaves of thin coarse paper bore records in very cursive Brāhmī script, since proved to be the local language of Khotan. Proof of the time of the abandonment of the settlement was furnished by Chinese docu-

ments, relating to personal affairs of monks and others, bearing dates within the last quarter of the eighth century. Numerous copper coins of the T'ang period agreed with this dating.

After visiting Rawak further north, where two much decayed stupas repeatedly dug into could be traced, I moved east to the Keriya river. It was reached after three days' difficult marching across a succession of high sand ridges. Then travelling up by the hard frozen river for four days we arrived at the oasis and town of Keriya. In the course of enquiry I heard of a *kōne-shahr* (old town) in the desert north of the oasis of Niya. Arriving there by January 21st, 1901, I received striking proof of the vaguely reported antiquity of the site. Two small wooden tablets brought away from one of its ruins by a villager seeking for 'treasure' bore Kharoshthī writing of the type peculiar to the north-west of India during the first few centuries A.D.

A sixty-mile march along the Niya river brought us to the lonely pilgrimage place of Imām Ja'far Sādiq, where the river finally loses itself in the sands. The intense cold permitted our water supply to be carried beyond into the waterless desert conveniently as ice. After two marches northward we arrived by January 27th at the southern portion of the dead settlement. Its ruins, subsequent exploration showed, extended over some fourteen miles.

The ruin where our guide had found the inscribed tablets proved that of a large house of timber and wattle walls. Wind erosion had cut them down to a few feet from the floor, causing the ruin, too, to stand as an island above the surrounding ground. Yet the desert's absolute dryness had allowed some two hundred wooden documents to survive under a scanty cover of sand, scattered in the rooms of what obviously had been an official residence. Most of the tablets retained their Kharoshthī writing remarkably preserved. The shapes varied greatly. It soon became clear that the oblong and

wedge-shaped tablets, particularly frequent, were originally arranged in pairs, one the text, the other a cover or envelope. Even a cursory examination sufficed to show that the contents, in a language akin to the early Prakrit of the Indian North-West, were of a secular character—documents, letters or miscellaneous records, often dated.

The clearing of a dozen more ruined dwellings, traced amidst the dunes at different points, yielded in abundance more ancient writings of this kind, and many objects besides, such as architectural wood carvings, decorated furniture, household implements, etc. A particularly rich deposit was brought to light from a great heap of refuse, filling a room of a small, much decayed structure. Besides some two hundred Kharoshthī tablets on wood, about two dozen similar documents written on leather were found here, and a number of narrow wooden slips bearing Chinese characters. These, when deciphered by M. Chavannes, proved to contain official records and communications, and one by its dating, corresponding to A.D. 269, has provided definite chronological evidence. Of equal antiquarian interest were Kharoshthī documents completely preserved and retaining the clay sealings over the string which fastened cover and under-tablet. The ingenious system of this ancient stationery could thus be established in detail. Still more interesting perhaps was a series of clay seals found intact, mostly taken from intaglios of classical workmanship.

The aridity of the climate has preserved many features of the structural and domestic arrangements in the dwellings of this modest Pompeii. The survival of so many documents relating to administrative and other practical affairs could safely be expected to throw light on varied aspects of life and culture in that early period of Central Asian history. The cursive script, the peculiarities of the language, and the nature of the contents, were bound to make the

complete study of the Kharoshthī documents from this and other sites a difficult task. Their full publication has since been achieved by the labours of three distinguished scholars, Professor Rapson and MM. Senart and Boyer.

Much remains to be done in critical interpretation. Among other facts of historical interest it has become certain that the settlement belonged to the tract known in the Chinese Annals of the Han dynasty as *Ching-chüeh*, and that it belonged not to Khotan but to the territory of Shan-shan, corresponding to the present Lop area far eastward.

When on February 14th I left this fascinating site I was well aware that ruins remained untraced among the dunes. Another distant site, reported where the Endere stream is lost in the sands, proved to comprise, besides a large débris area, the remains of a circular fort. On clearing a square temple cella within it, numbers of leaves from Buddhist manuscripts in Sanskrit and Tibetan were recovered, besides other curious relics. A Chinese sgraffito on the temple wall, dated A.D. 714, established the fact that the fort, situated on the Charchan-Lop route, was occupied during the period when the Tārīm basin is known to have been exposed to Tibetan invasion.

From Endere, the easternmost point reached, I returned to Keriya; then following its river for some 150 miles northward I visited the site known to treasure-seekers as *Kara-dong*. The remains here were of a decayed wooden structure within a quadrangle of mud ramparts. The finds, apart from a variety of well-preserved foodstuffs, were scanty. But interesting features of timber construction were observed, and Han coins were picked up near the ruin. It probably marked a fortified station guarding a difficult route crossing the Taklamakān towards Kuchā, which may have been in use at that early period.

After experiencing in that desolate locality the first of the season's

sandstorms, we turned south to survey sites less distant from the present inhabited area. There it became possible to identify the position of the town of *Pi-mo*, mentioned by Hsüan-tsang, to the north-east of Khotan, the same probably as Marco Polo's *Pein*.

Proceeding thence to the west, the great ruined Buddhist sanctuary of Rawak was explored. There, amidst dunes, rises an imposing stupa, closely resembling in architectural features the famous Kanishka stupa of Peshawar. Here a wealth of stucco relievos was found adorning the walls of an enclosing quadrangular court. Clearing the south-eastern portion of the court brought to light a large series of stucco images lining the walls. Many of them were of colossal size, and all closely recalled the Græco-Buddhist art of Gandhāra. Owing to the decay of the strong wooden frameworks, once supporting these masses of friable clay, the violent sandstorms blowing during our stay threatened to cause their collapse. Of the smaller relievos and of pieces already detached a considerable number was brought away without mishap, and all the rest were carefully reburied under sand. Close on a hundred copper coins of the Han dynasty were found deposited as votive offerings at the pedestals of images, or slipped into the plaster of the walls. None of them showed marks of long circulation. This indicated the fourth century A.D. as the lowest chronological limit for the Rawak sculptures.

During a short stay following my return to Khotan I succeeded in securing a detailed confession from Islām Ākhūn, the clever forger, to whom all purchased MSS. and block-prints in 'unknown characters' could be traced, as to the methods used for their production. On reaching Kashgar by the middle of May I arranged the safe transit of my collection of antiquities, filling twelve large boxes, to London through Russia. At Osh in Farghāna my journey on horseback and foot, covering some 3,000 miles, came to its end.

London was reached by July 2nd, and a safe place of temporary deposit for my collection found at the British Museum.

The interval between 1901 and 1906 was occupied, besides administrative work as Inspector-General of Education in the North-West Frontier Province, in the preparation of a report on the results of the first journey, and in arrangements for a second expedition which the generous consideration of the Indian Government and the British Museum rendered possible. This chance of fresh explorations was secured owing to the interest shown by Lord Curzon, then Viceroy of India, and the help of kind friends such as the late Colonel Sir Harold Deane, Chief Commissioner, North-West Frontier Province, and Sir John Marshall.

Expedition of 1906-08

The route chosen for the start on these fresh explorations in April, 1906, took me first through the transborder tract on the Swat and Panjkora rivers, which twenty-two centuries before saw Alexander's conquering columns. Here, as on subsequent rapid marches through the Hindukush valleys of Chitral and Mastuj, there were Buddhist remains to be surveyed, and observations to be gathered of ethnographic and antiquarian interest. I was able, by ascending the glacier of Darkōt (15,400 feet), to verify details recorded in the T'ang Annals of a remarkable military exploit which in A.D. 747 carried a Chinese force from the Pamirs into Gilgit. Subsequently, on reaching Sarhad on the Oxus, it became possible, below the watershed on the Barōghil, to locate the scene of the preceding Chinese victory over the Tibetans barring access to Yāsīn and Gilgit. Ascending the Āb-i-Panja to the source of the Oxus, Chinese territory on the Tāghdumbāsh Pamir was by May 28th reached across the Wakhjīr

Pass. When moving on to Kashgar from Sarīkol across the high Chichiklik plateau I was able to locate the place of refuge for travellers about which Hsüan-tsang records an interesting old legend.

At Kashgar the ever-helpful Sir George Macartney, my kind host, secured the goodwill of the provincial Chinese Government for my fresh explorations, and the services of a most valuable assistant as Chinese Secretary in the person of Chiang Ssŭ-yeh. By his scholarly interest in my researches and his devoted efforts to facilitate them, this excellent *literatus* proved a most efficient helper.

When on June 23, 1906, I started from Kashgar, Khotan was my goal. But the great summer heat of the plains would not allow of exploring ruined sites in the desert until September. The months until then were utilized for geographical tasks. In July I carried a plane-table survey to Khotan through the little-known barren hills along the foot of the K'un-lun. Subsequently with the assistance of Surveyor Rai Ram Singh, once more deputed by the Survey of India, this survey was pushed up to the glacier-crowned main range above Khotan.

After our return to Khotan, in September, I searched ruined sites in the desert to the north-east. In an area beyond the Hanguya tract we recovered a mass of interesting small relievos in stucco at the site of a Buddhist shrine. At another site, known as Khadalik, the ruin of a Buddhist temple, approximately coeval with the ruins of Dandān-oilik, yielded plentiful remains of stucco relievos and tempera paintings. The destructive operations of those who had quarried the ruin for timber and the more recent burrowings of treasure-seekers had fortunately not disturbed votive offerings left behind by the last worshippers, among them numerous fragments of paper manuscripts in Sanskrit, Chinese and the old Iranian language of Khotan. There were wooden tablets, too, inscribed in the same language and in Tibetan. Stringed rolls of Chinese copper

coins of the early T'ang period supplied definite chronological evidence.

Collecting at the Niya oasis as many diggers as could be supplied with water in the desert, I set out for fresh exploration at the site discovered in 1901 to the north. Ruined dwellings then unavoidably 'left over,' and others kept from view by high dunes, yielded an ample harvest of ancient household objects and implements, textile remains, architectural wood carvings, etc., and an abundance of wooden tablets of various kinds containing records and correspondence in Kharoshthī script. Among all these 'waste papers' (to use an anachronism) left behind by officials and other dwellers of the third century A.D. it was now easy to distinguish rectangular tablets of official type; wedge-shaped tablets for demi-official correspondence; oblong boards, often of large size, and labels used for miscellaneous records and accounts. Among the ruins cleared in the course of a fortnight of exacting work reference must suffice to two of special interest.

At a large structure, where the walls and any objects left between them proved completely eroded, a huge heap of stable refuse was found. From a small wooden enclosure low down, that had evidently served as a dustbin, there was recovered, besides curious sweepings of all sorts, a series of small tablets inscribed with exquisitely penned Chinese characters of Han times. As deciphered by M. Chavannes, they proved to have accompanied presents made by members of the local ruling family. There were other indications to show that the spot had once been occupied as its residence.

At another large ruin, once tenanted by an official of importance, a rich haul of Kharoshthī documents on wood was made. More than a hundred of them, mainly 'wedges' used for executive orders and miscellaneous 'office papers,' had been recovered near the floor of a small room once serving as an office, when the intelligent observation

of a digger led to the discovery of a little archive below the floor, perfectly preserved. Almost all the rectangular documents, numbering full three dozen, had their string fastenings unopened, secured by clay seals, mostly double, on the envelope. Even without more study, it was clear that they contained agreements, bonds or other records of importance, which had to be kept under their original fastening and seals to permit of their validity being established. Among the clay sealings those of classical workmanship prevailed. Among many observations of antiquarian interest made on this visit to the site I may refer to an ancient footbridge across a dry river bed, and to the remains of arbours, fruit trees, fenced enclosures, etc., traceable near it.

A desert journey of some four hundred miles during November carried us past Charchan to Charkhlik. At this little oasis, now the only permanently occupied place within the territory of ancient *Shan-shan*, Marco Polo's *Lop*, preparations were made for the long-planned expedition to the ruins of Lou-lan, first discovered by Dr. Hedin—an exacting task. In three days fifty labourers had to be raised for excavation, and arrangements made for the transport of supplies, including water as ice, sufficient to provide us on a seven days' march across waterless desert, then during a prolonged stay at the ruins, and on the return journey. Since only twenty-one camels could be secured, the problem looked formidable. How it was solved has been recorded elsewhere.

On December 15th we entered that dismal zone of excessive wind erosion, the striking feature of the northern portion of the Lop desert. The crossing of an endless succession of 'yardangs'—*i.e.*, steep clay terraces and sharply cut trenches between them—was very trying to beast and man. Frequent finds of flint arrowheads and other worked stones, also coarse potsherds, proved the ground, part of an ancient lake bed, to have been occupied by man in prehistoric

times. It was a great relief when, guided by a ruined stupa standing out as a landmark in the desolate landscape, we reached the main ruins.

They consisted of closely packed dwellings constructed like those at Niya, but badly eroded. The force and direction of the winds could be judged by the fact that of the walls of stamped clay enclosing the station, those facing east and west had been completely blown away, while only segments of the north and south walls could be traced. Excavation carried on unremittingly for eleven days in spite of icy winds and minimum temperatures, falling as low as 45° F. below freezing point, cleared all structural remains at this site with plentiful results. A rich mine was struck in a rubbish heap near the centre of the enclosed area.

Written records on wood and paper, also on silk, were numerous, the majority Chinese. The contents make it certain that this station, garrisoned by Chinese troops, controlled an important trade route. It was opened after the first expansion of Chinese political influence into the Tārīm basin about the close of the second century B.C., and led from Tun-huang on the extreme west of Kan-su to the oases along the foot of the T'ien-shan range. Difficult as the route was, it remained in use throughout the Han period and down to the early part of the fourth century A.D.

Kharoshthī documents, too, on wood, paper and silk were recovered, showing the same early Indian language found in the records at Niya to have been in common use also in this distant Lop region for administration and business. The influence of Hellenistic art was attested with equal clearness by fine pieces of wood carving, showing decorative motifs familiar from Græco-Buddhist sculptures, found in a small shrine some eight miles to the west, and by remains of elegantly carved, lacquered furniture, of decorated textiles, etc., recovered at some dwellings not far off. I was most anxious to trace

the line followed by the traffic which brought together these influences from China and the West. But any attempt at this difficult task was precluded at the time. Our ice store had run low, and increasing illness among the men showed how exposure told on them. While the main body was sent back direct to the terminal Tārīm, I myself moved with a few men through the unexplored desert south-westwards. A seven days' tramp across high ridges of sand brought us to ice-bound lagoons from the Tārīm, whence Charkhlik was regained.

When moving into the Lop desert I had passed and rapidly prospected a ruined site some fifty miles to the north-east of Charkhlik, and a cultivated patch not far off, known as Mīrān. I returned to this site by the close of January, and found three weeks' hard work, carried on amidst icy gales almost constantly blowing, amply rewarded. A large ruined fort rising above the wind-swept gravel plain proved to have sheltered a Tibetan garrison during the eighth-ninth century A.D. The accumulated refuse filling its rooms and half-underground hovels yielded Tibetan records on wood and paper, often complete. The number in the end exceeded a thousand. Examination by Professors F. W. Thomas and A. H. Francke shows them to be mainly office papers relating to troop movements, frontier posts, etc. The total absence of Chinese writing is significant, as was also the appearance of 'Runic' Turkish in a small, crumpled packet of papers.

Much older and of greater interest were the art remains brought to light from débris mounds of Buddhist shrines. Conclusive archæological evidence showed that these must have been in ruin centuries before the Tibetan occupation. From one emerged remnants of colossal stucco relievos representing Buddhas, showing the closest relation to Græco-Buddhist sculpture. The influence of Hellenistic art was reflected still more strikingly in tempera paintings

which covered what remained of the walls of two domed temples enclosing small stupas. One contained a series of half-length figures of fine winged angels. In the other was a spirited representation of the Buddhist legend of Prince Vessantara, and below a dado showing a cycle of youthful figures in a gracefully designed setting. Kharoshthī inscriptions indicated the third century A.D. as the date when these temples were deserted.

After sending off to Kashgar our archæological finds, including whatever of the mural paintings of Mīrān, on friable mud plaster, could be safely moved and packed, I started on February 21st, 1907, on the long desert journey eastwards. The ancient route by which Marco Polo travelled, and before him Hsüan-tsang, was to take us to Tun-huang on the westernmost border of China proper. The seventeen long marches along this desolate track afforded an opportunity to test the accuracy of the accounts left by those two travellers, and offered plentiful and interesting geographical observation. Near the terminal basin of the Su-lo-ho river I sighted remains of ruined watch-towers, and soon came upon traces of an ancient wall. Archæological indications showed that these ruins belonged to a system of frontier defence corresponding in character to a Roman *limes*. After a short halt at Tun-huang I returned to the still wintry desert for its exploration.

Nothing was known of the ruins to the cultured Chinese officials, but they all showed a very helpful interest in my work. It would otherwise have been impossible to secure adequate labour for excavation in the desert dreaded by the local Chinese. In the course of two months' trying work we succeeded in surveying the line of the ancient *limes* to its westernmost point, a distance of more than 150 miles from An-hsi, and in exploring the ruins of all its watch-stations, sectional headquarters, etc. The massive watch-towers, usually found at intervals along the wall, were my best guides in

tracing the line. From the ruins of the modest quarters near them, and from the refuse heaps left behind, Chinese records, almost all on bamboo or wood, were recovered in plenty. The total number, including fragments, amounted to close on two thousand. Exactly dated documents, first roughly interpreted for me by my scholarly Chinese secretary, and since fully published by M. Chavannes, make it certain that this frontier line dates back to the end of the second century B.C., when Chinese expansion into Central Asia began. For the greater part it remained guarded down to the middle of the second century A.D. Its purpose was to protect the territory south of the Su-lo-ho river, indispensable as a base and passage for the Chinese forces, political missions, etc., sent to control the Tārīm basin, against Hun inroads from the north.

Owing to the dryness of the desert all the records, referring mainly to details of military administration, survived in remarkable preservation, and it was the same with clothing, equipment, etc. It is thus possible to draw an accurate picture of the life led along this desolate border. Of the trade passing along it curious relics survive, such as a dozen letters written in early Sogdian, and salvage from a silk bale inscribed in Brāhmī characters and an Indian language, stating length, price, etc., obviously for sale purposes. The border wall, built mainly with layers of fascines between clay, survives wherever its line coincides with the direction of the prevailing winds.

When, in mid-May, our exploration of the *limes* was complete, I felt eager to return to Tun-huang for an important archæological task. In 1902 my attention had been called to the sacred Buddhist grottoes known as the 'Halls of the Thousand Buddhas' by my friend the late Professor L. de Lóczy, who had seen their paintings and sculptures in 1879. The expectations raised by him had been fully verified when in March I paid a flying visit to the caves, carved

in conglomerate cliffs at the mouth of a barren valley some twelve miles to the south-east of Tun-huang. The hundreds of grottoes honeycombing the rock faces revealed a profusion of beautiful tempera paintings, in style and composition showing close affinity to the Buddhist pictorial art transplanted from India to the Tārīm basin.

Sculptural remains in the grottoes were equally abundant. In spite of the damage the statuary had suffered during centuries of natural decay, and even more from the hands of iconoclasts and pious restorers, enough remained to attest the prolonged continuance of sculptural traditions that Græco-Buddhist art had developed and Central Asian Buddhism had transmitted. Antiquarian indications plentifully suggested that the remains in most of the larger shrines belonged to the times of the T'ang dynasty (seventh-tenth centuries A.D.), when the sacred site, like Tun-huang itself, enjoyed prolonged spells of prosperity. Since a fine stone inscription of T'ang times mentions the first consecration of the site in A.D. 366, even earlier remains might be looked for. A search for these, and any detailed study of this wealth of picture and sculpture, would not have been possible without Sinologist training and expert knowledge of Chinese secular art. Nor could any art remains be removed without grave risk of popular resentment; for, decayed and neglected, the temples were still real cult places 'in being.'

Fortunately the discovery some years before of a great deposit in a walled-up chapel offered a better chance. I had heard that a Taoist priest, while restoring one of the cave temples, came upon a mass of manuscripts. I found the rock-carved recess, where the trove had lain hidden for close on nine centuries, almost completely filled. The briefest details of the nature of the find must suffice.

Among the Chinese manuscripts brought away to the British Museum, comprising about 3,000 more or less complete rolls and close on 6,000 documents and detached pieces, apart from Buddhist

canonical writings, there are many fragments of secular texts otherwise unknown and hundreds of local records. Exact dates found extend from the fifth to the close of the tenth century A.D. The Tibetan rolls and documents come nearest to the Chinese in character and extent. Among plentiful remains in Indian Brāhmī there are texts, mainly Buddhist, in Sanskrit as well as in two Central Asian languages—namely, Khotanese or 'Saka' and Kuchean or 'Tokhārī.' The cross-currents of Buddhist propaganda, meeting once at Tun-huang, are illustrated by texts in the Iranian language of ancient Sogdiana, and by others in early Turkish written in varieties of a Semitic script. The presence of Manichæan doctrine and cult is attested by texts in Chinese and Turkish, including a complete little book in 'Runic Turkish.'

The most gratifying of all the finds at the Caves of the Thousand Buddhas were the fine pictorial remains. They were carelessly packed away among the manuscripts, yet often remarkably preserved. Whether painted on silk, cotton or paper, almost all illustrate the Buddhist religious painting of China in the T'ang period—a phase of pictorial art hitherto practically unknown in genuine specimens. The Græco-Buddhist influence is clearly reflected. No attempt can be made, even cursorily, to indicate the subjects and styles represented in the beautiful silk banners, showing Buddhist divinities or legendary scenes of Buddha's life story; or in the larger paintings which represent Bodhisattvas, often grouped in sumptuous settings of celestial attendants, or Buddhist heavens with their wealth of mythological scenery. All these paintings, more than four hundred in number, were votive offerings. In some the dates, in others the representations of the donors and their families, have furnished evidence as to developments of style, etc. Into this mass of fine relics pieces of exquisite tapestry and some large embroidery pictures had found their way. A source of satisfaction, almost as great as

the recovery of the material, has been their careful study by leading Western and Japanese scholars and the reproduction of selected specimens in my *Serindia* and the portfolio of *The Thousand Buddhas.*

After the strain of these labours about Tun-huang, it was time by the beginning of July to exchange archæological work in the torrid desert plains for geographical work in the Nan-shan mountains. After carrying an extensive survey across their high passes and valleys, we started in September, 1907, for the long journey to the Tārīm basin and a second winter campaign. From An-hsi to Kara-shahr, nine hundred miles, mainly desert, we travelled along the ancient route followed by trade and military movements from China to the west since T'ang times. It had seen Hsüan-tsang on the adventurous start of his travels to India.

At Hāmi and Turfān important sites were surveyed, but a variety of considerations precluded archæological operations until the north-eastern corner of the Tārīm basin was reached in December. There, at the foothills to the south-east of Kara-shahr, excavations at a collection of Buddhist shrines known as Ming-oi ('Thousand Houses') yielded an abundance of stucco relievos and mural paintings, besides delicate carvings, once votive gifts. An expedition into the desert south-west of Korla proved that stories about 'sand-buried towns' exercise a spell over popular imagination now, as in Hsüan-tsang's time. After visiting Kuchā and its sites, I set out across the Taklamakān to the Keriya river—a fourteen days' tramp over high dunes and the waste of a dead delta before water, or rather ice, was found in a new terminal bed of the shifting river. No ancient remains were traced until we regained Kara-dong, but interesting topographical observations indicated a route, practicable within historical times, directly connecting Kuchā with the string of oases to the east of Khotan.

Among the tamarisk-covered sand cones fringing the oases northward our old treasure-seeking guides from Khotan had tracked more ruins. The excavation of small Buddhist shrines was rewarded by finds of wall paintings, manuscripts, etc., pointing to abandonment at the close of the eighth century, as at Dandān-oilik and Domoko. After spending March and April in exploration in the desert north-east and north of Khotan we gained Aksu, far away in the north. On the way, while clearing masses of refuse below a ruined fort on the desert hill of Mazār-tāgh, we gathered quantities of wood and paper documents in a variety of scripts. The prevalence of Tibetan records pointed to occupation during the period of Tibetan invasion in the eighth and ninth centuries.

At Aksu the kind help of P'an Tajên, my old Mandarin friend from Khotan, made it possible to arrange for a survey by Surveyor Lal Singh of the outer T'ien-shan range as far as Kashgar. I myself, after passing the barren unsurveyed hill-chain between Uch-Turfān and Kelpin, traced extensive débris areas occupied by large settlements down to the eighth century, since abandoned to the desert. Ruined watch-towers proved that the ancient Chinese high-road to Kashgar had once passed here. The increasing heat and the thought of many heavy tasks before me now obliged me to return to Khotan.

Six weeks of constant toil were spent in Khotan in the sorting and packing of my archæological collections, making in the end fifty camel loads. By August 1st, 1908, I was able to send off this convoy to the foot of the Kara-koram passes. Then I set out with Lal Singh to the unexplored headwaters of the Yurung-kāsh river, and thence over high plateaux to the uppermost Kara-kāsh. After passing a line of great glaciers, where the Keriya river has its sources, and over high plateaux along the main K'un-lun range, crowned here by peaks of more than 23,000 feet, we struck traces of an old

route once used in times of emergency for direct communication from Khotan to Ladakh.

When searching for the Yangi-dawān pass by which this route is believed to have crossed the K'un-lun range, I ascended a steep, much-crevassed glacier. Just at the completion of this last exploratory task my feet were severely injured by frost-bite. In the end it cost me the loss of my right toes. In that crippled state I had to have myself carried across the Kara-koram passes to Ladakh and thence to Srinagar. I reached England at the close of January, 1909.

The examination of the antiquities of all kinds, safely arrived by then at the British Museum, and the organization of the researches needed for their study, proved a very heavy task. It was facilitated by a period of deputation generously granted by the Government of India. But those researches were far from complete when by the close of 1911 I returned to India. Sir John Marshall's friendly support had secured my transfer to the Archæological Survey. My duties on the North-West Frontier could not keep my eyes long from turning towards plans of another Central Asian expedition. They were encouraged by the kind interest which Lord Hardinge, then Viceroy of India, and Sir Harcourt Butler, then Member of Council for Education, showed in my past labours. Finally, the sanction by the Secretary of State of the proposals submitted and the provision of an adequate grant to cover the cost of the intended fresh explorations enabled me to start from Kashmir by the end of July, 1913. My account of this expedition must be restricted to brief notes of the results obtained.

Expedition of 1913-16

The route chosen for approach to Chinese Turkistan led through the Hindukush valleys of Darēl and Tangīr, mentioned in the

accounts of Chinese pilgrims but as yet unvisited by any European. The protection afforded by Rāja Pakhtūnwālī, who had made himself master of the turbulent local Dardic tribes, made it possible to trace interesting remains of pre-Muhammadan civilization, and to identify the site of an important Buddhist sanctuary. After gaining the Chinese border on the Tāghdumbāsh Pāmīr I passed to Kashgar by an unsurveyed route through the gorges of the Kara-tāsh river. The help afforded there by Sir George Macartney was all the more valuable as the Chinese revolution of 1911 and local troubles had seriously disturbed the peace of the 'New Dominion.'

While moving east along the foot of the T'ien-shan range, then across the Taklamakān to the south, useful antiquarian observations were made before gaining the Khotan oasis in November. The journey thence to Lop-nōr lay necessarily along the old caravan route previously followed. This allowed me to trace more remains of Buddhist times north of Domoko. On a fresh visit to the sand-buried settlement beyond the termination of the Niya river, abandoned to the desert in the third century B.C., we cleared ruined dwellings previously hidden among high tamarisk-covered sand-cones or deeply buried in sand. They yielded a further collection of Kharoshthī documents on wood and other relics.

After recovering remains of wall paintings from one of the ruined Buddhist shrines in Mirān, I set out on February 1, 1914, into the waterless desert northward. Here, moving towards ancient Lou-lan by a new route, we discovered the ruins of a large fort and settlement. Ancient records in Kharoshthī, Chinese and Early Sogdian, besides other relics, proved occupation to have ceased here early in the fourth century A.D. At the ancient Chinese station of Lou-lan the clearing of deeper deposits of refuse yielded finds of ancient documents in the same languages. More important was the discovery to the north-east of an ancient Chinese burial ground.

The abundance of pieces of fine figured silks, embroideries and other textiles bore striking testimony to the high standard reached in the ancient Chinese silk industry, as well as to the trading of its products with the classical West. Equally significant of those trade relations were fragments of fine woollen tapestry showing patterns unmistakably Hellenistic in character and in part probably imported from the Near East.

It was important to determine the route by which that ancient Chinese trade had passed from the western end of the Han *limes* through the dried-up Lop Sea bed to Lou-lan and onwards to the north-eastern extremity of the Tārīm basin. This task was solved in the course of ten days' march across ground now utterly waterless, first by the discovery of a succession of small ruined watch-stations; further on by lucky finds of coins and such traces as the passage of Chinese political missions, troops and traders had left behind.

We regained Tun-huang by the close of March, 1914, following the ancient border line discovered on the second expedition. Then we successfully traced its eastward continuation for close on 250 miles more, to the Etsin-gol river. The watch-stations along this portion of the *limes* yielded ample finds of Chinese records on wood, remains of arms, furniture, etc., left behind by the Chinese troops which during the first century before and after Christ had guarded this most dismal of borders. By descending the Etsin-gol for some 150 miles to its terminal delta, the ruined town of Khara-khoto was reached in May. Its identity with Marco Polo's 'City of Etzina' was then definitely established. It had been visited before by Colonel Kozloff, who in one of the ruined stupas had made a notable find of Buddhist texts and paintings. Systematic clearing of the ruins and of extensive refuse-heaps near them brought to light more Buddhist manuscripts and block-prints on paper, both in Tibetan and the little-known Tangut language, besides miscel-

laneous records in Chinese, Uigur and Tangut scripts; block-printed pictures; stucco relievos, etc.

When increasing heat in June stopped work at desert sites, we turned south to the high Nan-shan range. With the help of Surveyor Lal Singh, once again my devoted travel companion, the mapping of 1907 was extended by accurate surveys of the high ground further east, containing the headwaters of the Kan-chou river. After a serious riding accident had obliged me to regain Kan-chou in August, I followed the river down to Mao-mei on the Etsin-gol. In September, still in a crippled state, I set out on a journey of some 500 miles which carried us, by unsurveyed routes, right across the desert ranges of the Pei-shan to the easternmost T'ien-shan. The journey thence along its northern foot, past Barkul and Guchen, acquainted me with a part of Dzungaria which, owing to the part it has played in the great migrations of the Yüeh-chih or Indo-Scythians, Huns and Turks, presents distinct historical interest.

The important oasis of Turfān, gained early in November, 1914, by a high and hitherto unsurveyed pass across the T'ien-shan, afforded during three winter months opportunities for fruitful archæological work. By excavations at ruins of Kara-khōja and Toyuk, which the protracted and fruitful labours of Professors Grünwedel and Von Lecoq had left untouched, a quantity of interesting art relics, mainly of Uigur times, was recovered. The careful removal of wall paintings from the Buddhist cave shrines of Murtuk saved a large series of fine Buddhist pictures, dating from the same period, from more such vandal destruction as they had been exposed to at the hands of the local inhabitants.

In January, 1915, this work having progressed sufficiently, I applied myself to a task as novel as it was fruitful. Above the large village of Astāna and near the old capital of the oasis there

extends a vast ancient burial-ground. Most of the tomb chambers, marked by small mounds on the surface, had already been searched for valuables; but the systematic search of a large number yielded abundant archæological spoil. Owing to the extreme dryness of the Turfān climate most of the bodies and the objects deposited with them were found in remarkable preservation. The latter comprised a great variety of articles of food, dress, personal use, and the like. Whether of actual size or reproduced in miniature, like the painted stucco figurines of attendants, etc., they help to illustrate the daily life led in Turfān in the sixth and seventh centuries A.D. Chinese inscriptions found near the approaches of tombs furnish exact dates, besides the names of persons and other details. The chronological information adds greatly to the interest of the rich collection of fine figured silks and other decorated fabrics recovered from the torn pieces of garments in which the bodies had been wrapped. A number of textiles of manifestly Persian design and finds of coins help to illustrate the trade exchange between China and Western Asia which Turfān, like other oases on the ancient caravan route of Turkistan, witnessed at that period.

The briefest reference must suffice to the interesting antiquarian observations and finds made subsequently, when, after striking south-east, we explored remains traced along the ancient Chinese route leading from Lou-lan along the foot of the barren 'Dry Mountains' to Korla in the north-eastern corner of the Tārīm basin. There the three surveyors I had sent out from Turfān for work in different directions rejoined me. Then we set out again in three separate parties for the long journey to Kashgar. I myself, for the sake of antiquarian research, kept to the line of oases along the foot of the T'ien-shan through which the chief caravan route of the Tārīm basin still passes, as it has done all through historical times. Among the tasks carried out on this journey was a close survey of the large

and historically important oasis of Kuchā and its numerous ancient sites. It showed that the area occupied in Buddhist times demanded for its cultivation irrigation resources greatly in excess of those which the volume of the two rivers of Kuchā can furnish at the present day.

At Kashgar I arranged during June, 1915, for the safe packing and transport to India of my eighty heavy camel-loads of antiques. I then started myself on the long journey which was to take me across the Pamirs and through the valleys adjoining the upper course of the Oxus into Russian Turkistan. It was meant mainly to enable me to study on the spot questions of historical topography connected with the route which the ancient silk trade from China had followed to the Middle Oxus and with those by which the old Chinese Buddhist pilgrims had travelled between the Tārīm basin and the Hindukush. Anthropological measurements were made among the interesting populations of Homo Alpinus type found in those remote mountain tracts. For archæological observations of interest opportunities offered both along the great valley of the Alai and in Wakhān, after I had reached the latter past the great Pamir lake described by Hsüan-tsang and Marco Polo.

After three months of almost constant travel, during which close on 1,700 miles were covered on foot or horseback, I arrived towards the end of October, 1915, at Samarkand. After the Transcaspian Railway had carried me to the Persian border, a long journey through Khorasan, past Meshed and along the Perso-Afghan border, allowed me to reach Persian Sistan by the beginning of December.

There in ancient *Sakastanē*, recalling by its name those valiant Sakas who had played their part in Indian history, a third winter's archæological campaign was rewarded by interesting results. Among extensive ruins of a palace on the isolated rocky hill of Kōh-i-Khwāja, sacred in Zoroastrian tradition, I discovered remains of wall paintings, the oldest so far brought to light within Persia (Iran).

Those representing figures from the Rustam cycle of the epic legend of Iran belong to the Sasanian period. Others, distinctly Hellenistic in style, date probably from Parthian times and illustrate the Iranian link between the Græco-Buddhist art of north-western India and the Buddhist art of Central Asia. In the desert south of the present cultivated area I traced remains of a far more distant past. On ground where excessive wind erosion has produced conditions exactly corresponding on a smaller scale to those observed in the dried-up delta north of Lop-nōr, abundant relics of the chalcolithic period, comprising painted pottery fragments and stone implements from prehistoric settlements, were found on the surface. Another interesting discovery made on the same ground was that of a chain of ancient watch-stations stretching from the southernmost Hāmūn marsh towards the Gaud-i-Zirreh, the terminal lake-bed of the Helmand. They form an exact counterpart of the Chinese Han *limes*, and may date from the Parthian period.

It was fortunate, in view of prevailing war conditions, that the arrangement and examination of the multifarious antiquities brought back from this third expedition could, after my return to India in March, 1916, be entrusted in Kashmir to my old artist friend and assistant, Mr. F. H. Andrews. His expert knowledge and care had greatly benefited my previous collections, while these were temporarily deposited at the British Museum. To his skill is due also that all the mural paintings safely brought back from afar, across deserts and high ranges, are now safely set up in the Museum of Central Asian Antiquities at New Delhi. The publication of faithful reproductions of these paintings, though duly arranged for ever since 1926, has owing to circumstances beyond my control not yet been achieved: this is much to be regretted.

But apart from this I have reason to feel gratified by the fact that with the generous support of the Government of India and the

Secretary of State the results of all my Central Asian expeditions have been fully recorded in the eleven quarto volumes of *Ancient Khotan* (1907), *Serindia* (1921) and *Innermost Asia* (1928). They comprise full descriptive lists of all antiquities and are accompanied by a large series of maps prepared by the Survey of India. Of the numerous separate publications by eminent scholars dealing with the great mass of manuscript materials recovered in a variety of languages it must suffice here to mention the volumes of M. Chavannes' *Documents Chinois* and of Professor Rapson and MM. Senart and Boyer's *Kharoṣṭhī Inscriptions*. There can be little doubt that these manifold materials will yet for a long time to come offer subjects for learned investigations.

AUREL STEIN.

(*e*) INDIAN TIBET

'Indian Tibet' denotes the West Himalayan countries from the Indus to the Sutlej valley, which once formed the kingdom of western Tibet and are now within the Indian Empire. These countries were not all influenced to the same degree by Tibetan immigration and invasion in early times, and, after the early tenth century, by the nine hundred years' domination of Tibetan kings of Ladakh, descended from the ancient royal house of Lhasa. Some became preponderatingly Tibetan in culture and speech and Lamaistic in religion; in others, the indigenous Mon inhabitants retained their local languages and cults after the introduction of the Tibetan language and Lamaism.

Accounts of Jesuit missionaries (Azevedo, d'Andrada, Desideri) in the seventeenth and eighteenth centuries, and of British travellers (Moorcroft, the Gerards, Vigne) in the early nineteenth century, contain information on parts of the Ladakhi kingdom, and

by 1830 A.D. the existence of a Tibetan Chronicle of the kings of Ladakh from ancient times was reported to the Hungarian founder of Tibetan linguistic studies, Csoma de Körös, who lived for eight years in Zangskar and Kanawar. But it was Alexander Cunningham's masterly *Ladak* (London, 1854) that first provided a comprehensive survey of the whole region, of its past as well as its present. His lists of kings, chiefs and priests, his summaries of local information and of records for the various districts, while liable to correction or addition in certain cases, were invaluable as a basis for subsequent historical or archæological research. Though not a Tibetan scholar, he combined the gift of eliciting information with a keen critical sense.

Cunningham doubted the survival of any historical records dealing with the Ladakhi kings before the sixteenth century. However, Hermann von Schlagintweit obtained in Leh in 1856 a copy of the *La-dvags-rgyal-rabs*, which his brother, Emil, published with a German translation at Munich in 1866, and the Moravian missionary H. A. Jäschke used a similar copy for his Tibetan-English dictionary (London, 1881). Emil von Schlagintweit's *Tibetan Buddhism* was also a valuable work. Another Moravian missionary, K. Marx, found two fuller MSS. of the *Rgyal-rabs* at Leh, but died just before the MSS., with his translation and notes, for the period *c.* 900 to 1620 A.D. appeared in *J.A.S.B.*, 1891. In 1894 Professor Dalman, his relative, published an English version, with some notes for the next period up to 1834; but the Tibetan MSS. had disappeared, and in 1902 his sister-in-law, Mrs. Francke, published with a translation the MSS. compiled for Marx by the Ladakhi Munshi Dpal-rgyas, which dealt with the Dogra wars, 1834-1842 A.D.

The outstanding importance of the Ladakhi Chronicles, so far published piecemeal in two languages, with a gap in the MSS., led

Dr. Vogel, the officiating Director-General of Archæology in India, in 1910 to ask the late Dr. A. H. Francke, for thirteen years resident at Moravian mission stations in Lahul and Ladakh, and a competent Tibetan scholar, with an expert knowledge of West Tibetan history, folk-lore and archæology, to bring out a complete new version of the *Rgyal-rabs*. The Director-General, Dr. (now Sir) John Marshall, had secured Dr. Francke's services for eighteen months in 1909-10 for a field-survey of the West Tibetan countries, which was successfully completed and described in Part I of *Antiquities of Indian Tibet* (Arch. S. of I., New Imperial Series, XXXVIII, Calcutta, 1914), to which we shall revert later. This volume on page xiii details the author's previous works on Indian Tibet up to that time. Of these the excellent short *History of Western Tibet* (London, Partridge, 1907) merits special mention.

Part II of *Antiquities of Indian Tibet* (Arch. S. of I., New Imperial Series, L, Calcutta, 1926) contains not only a newly edited complete text of the Ladakhi Chronicles, based on five Tibetan MSS., with English translation and very copious notes, both historical and topographical, but also 23 sections, entitled *Minor Chronicles*, relating to Zaṅs-dkar, Bzaṅ-la, Gu-ge, Bu-rig and Lahul (I to XIII). These *Minor Chronicles* also include other texts with translations (XIV to XXI, XXIII) and 'Notes on those Vassal States for which no Chronicles remain' in 9 subsections (XXII). Five specially drafted maps give in exact transliteration the identifiable place-names that occur in the texts, and a very complete explanatory index of transliterated names, mostly Tibetan, is found on pages 283 to 310. The present writer, who checked the maps and the index in the final proof, can testify to the scholarly care taken in their compilation. This volume had the advantage of the editorship of Dr. F. W. Thomas, Librarian at the India Office and later Boden Professor of Sanskrit at Oxford, who contributed a

foreword and whose unique knowledge of classical and of the pre-classical Tibetan in Central Asia assisted in the interpretation of many difficult passages in the Tibetan text. Dr. Francke was also helped in many ways by the Ladakhi, the Rev. Joseph Gergan (or Tshe-brtan) of the Moravian Mission.

Though this volume's range is primarily historical, it is well to stress its archæological importance, apart from the fact that the Archæological Survey of India sponsored it throughout. In so static a culture as that of Ladakh and Tibet, the absence of any framework of consecutive events, such as the Chronicles alone supply, would materially enhance the difficulty of dating, even roughly, most ancient monuments; and names of kings or other persons found in undated or incompletely dated inscriptions would remain isolated items.

But, as Francke explains in his introduction (page 13), even the *Rgyal-rabs* does not itself provide an exact system of chronology. Before the sixteenth century it only uses the short twelve-year animal cycle, and until well on in the nineteenth century it gives no serial numbers for its sixty-year cycles, which combine the five elements with the twelve animal names. He also found the Ladakhi cycles to be twelve years behind those of Central Tibet. For the latter we may refer to M. Paul Pelliot's tables as a safe guide. However, Francke has approximately dated all the successive reigns of the Ladakhi kings by the application to the events of certain of them of nine sets of definite dates, derived from Chinese, Tibetan, Mongolian, Kashmiri, Turki, Mughal and European sources, and ranging from 816-42 A.D., for the reign of king Glaṅ-dar-ma of Tibet, to 1834-42 A.D., for the Dogra wars.

The accuracy of the latter part of the Chronicles is confirmed by Francke's discovery in inscriptions on rock or stone of the names of all the kings from king Lha-dbaṅ-rnam-rgyal (*c.* 1500-32 A.D.)

onwards. For the earlier period records on stone are rarer and often incomplete. However, he found some, but rather slender independent corroboration of the part of the Chronicles prior to 1500 A.D., as three kings are named in inscriptions, two in songs and another, Rin-chen, in the Kashmir Chronicles, the *Rāja-taraṅgiṇī* of Jonarāja; just sufficient evidence, indeed, to justify Francke's claim that the account of the early West Tibetan dynasty is 'on the whole true and reliable.'

The *Rgyal-rabs* traces the ancestry of the Ladakhi royal house through the historical dynasty of Central Tibet (*c.* 600-900 A.D.) far back into the realms of Buddhist and Bon-po mythology, Francke's close analysis of which has yielded some identifiable tribal and place names, and kings, such as kings Bu-ram-śiṅ-pa and Gña-khri-btsan-po, named in inscriptions and legends in Ladakh. The fulness of his notes and references for this legendary period was made possible by his previous researches into folk-lore, the Gesar myth and the Bon religion.

Apart from the completely annotated and mostly entirely new texts, with translations, and other material under the head of *Minor Chronicles*, Francke's Tibetan text of the *Rgyal-rabs*, itself the result of the first critical collation of copies of a number of MSS., some not used before, contains some chapters hitherto unpublished. These are chapters ii, on cosmology; viii, on the kings from *c.* 1625 to 1834 A.D.; and x and xi, on the years after 1842. The abundance of explanatory notes throughout, which reveal the author's intimate knowledge of the languages, peoples and topography of Indian Tibet and its neighbours, fully vindicates his claim that his translation 'yields a richer harvest of historical facts than could be gathered from the former translations.' For certain outlying countries the material available is still somewhat scanty. Little is given in Part XXII for Nub-ra, Spyi-ti (Spiti) and Kanawar. Besides the

Chronicles now published, Francke collected many documents, especially 'Inscriptions on stone, etc.,' that await publication, and made notes on numerous places of historical or archæological interest. The bibliography of his works on Indian Tibet, 19 in number, given on page 290 of Vol. II, which is naturally fuller than the earlier one on page xiii of Vol. I already mentioned, indicates the wide range of his researches.

Dr. Francke's long tour between June 14 and October 16, 1909, on behalf of the Archæological Survey, described in *Antiquities of Indian Tibet*, Vol. I, was carefully planned, so as to include countries, such as Kanawar, Spiti, parts of Rubshu (Rub-so) and of Ladakh not visited by him on previous journeys from Moravian mission stations in Lahul and Ladakh, as well as sites likely to reward further examination. Political restrictions prevented a visit to the important sites of mTho-lding and Tsaparang within Tibetan territory, but he sent Lob-zang of Poo there to copy inscriptions. So these historical places were left for later investigation by the Italian orientalist, Professor G. Tucci. We may note here that in the 'Personal Narrative' of Vol. I the transliteration of Tibetan names does not follow the stricter system used in Vol. II, which, for example, gives *Mtho-gliṅ* and *Rtsa-braṅ* for the sites just mentioned; hence the present account also cannot be entirely consistent in this matter. Nor is apology needed for the use of incorrect, but generally accepted, names, such as Ladakh, Spiti and Zangskar. Dr. Thomas' authoritative remarks on the transliteration of Tibetan words in his Foreword to Vol. II merits notice.

Starting from Simla, Dr. Francke followed the Hindustan-Tibet road to Shipke (Hrib-skyes) just within Tibet. From Poo (Spu) in upper Kanawar, in the Bashahr State, he travelled north through lower Spiti, and from Kyi-bar over the Pharang-la (*c.* 18,300 feet) into Rubshu to the upper Indus; thence over the Thag-lang-la

(17,500 feet) into Ladakh, and on to Leh via Gya (Rgya) and Ubshi. After a halt at Leh from August 22 to September 20, he proceeded, with diversions to Alchi, Chigtan, etc., along the Kashmir road, via Khalatse, Kargil and Dras over the Zogi-la into the Sind valley, and reached Srinagar on October 16 (see itinerary pages vii-viii, and map of route, end of book).

These four months of travel over difficult country yielded a remarkably rich harvest of information on archæology, ethnology, religion, customs, and many other matters. Dr. Francke's only assistants were an educated Tibetan for copying documents and inscriptions, and a Government photographer, Babu Pindi Lal, whose competence is shown in the ninety excellent photographs, well reproduced on the forty-five plates of the book, and who also took impressions of inscriptions. We need only mention the descriptions of non-Tibetan places in the Sutlej valley, such as Kotgur, Nirmand, Rampur and Sarahan, which were visited before Dr. Francke crossed the Wangtu bridge into ground that till 1650 A.D. belonged to western Tibet. From now on the prevailing type of dwelling was the flat-roofed Tibetan house of sun-dried brick, suited to the more arid climate east of the mid-Himalaya. However, *devata* temples here in Kanawar, as in Lahul, still showed the slanting gable roof, so common in the Simla Hill States, Mandi, Kulu and Chamba (Plates VI, VIII).

At Kanam, where Csoma de Körös studied Tibetan, 1827-30, was found the first of many sites associated with Lo-tsā-ba Rin-chhen-bzaṅ-po (Ratna-bhadra), 964-1054 A.D., the Tibetan contemporary of Atiśa (Tib. Phul-hbyuṅ), the Indian reformer of Buddhism in Tibet in the eleventh century. Dr. Francke's discoveries throw much light on this period of the greatest activity in temple building that western Tibet has known. Few countries visited on this journey did not contain temples or sites attributed to this Lo-tsā-ba (translator of

the Buddhist scriptures into Tibetan), whose main temple at Mtho-gliṅ in Gu-ge was subsequently described by Professor Tucci. In all these temples the interior decoration is in an Indo-Kashmiri style, probably executed by craftsmen trained in Kashmir.

Dr. Francke found inscriptions, some of contemporary date, naming Rin-chhen-bzaṅ-po and Phul-hbyuṅ (Atiśa), also members of the Gu-ge royal house, of whom king Hod-lde and his brothers brought Atiśa to Gu-ge in 1038 A.D. A stone at Poo in Kanawar named Hol-lde's uncle, king Ye-śes-hod, a zealous religious reformer in touch with Buddhists in India, and a wall-inscription in Ta-bo temple, Spiti, mentioned Hod-lde's brother, Byaṅ-chhub-hod, together with the two famous Lamas named above. It may also be noted that Hod-lde's second brother, Zhi-ba-hod, is named on an old brass Buddha image at Graṅ-rtse monastery, Spiti, found by the writer. Byaṅ-chhub-hod and the Lo-tsā-ba again occur in a fifteenth-century inscription near Horling on the Spiti river east of Lha-ri.

Of the thirteen or fourteen sites or buildings attributed to Rin-chhen-bzaṅ-po, seen on this journey, three in Kanawar, Spiti and Ladakh, at Na-ko, Ta-bo and Alchi ('Al-lci) respectively are the finest and best preserved. Each contains a group of temple halls, 4, 7 and 6 in number, situated on level ground, and the main temple of the group is that of Rnam-par-snaṅ-Mdzad or Vairocana, the chief of the five Dhyāni-buddhas (Plates XIIIa, XVa) whose image occurs in other temples of this period, for instance at Lha-lun, Spiti, and the Gum-ran chapel, in Lahul, seen by the writer. The exterior appearance of these temples is undistinguished. Inside, characteristic features are: (i) groups of artistically modelled and painted stucco figures of deities on wall brackets in full relief, at Ta-bo, thirty-two in number, in the great temple (Plates XV-XVII); (ii) groups of the Medicine Buddhas (Sman-bla); (iii) wall-frescoes arranged in medallions (Plate XXXIX); (iv) *garuḍa-nāga* (or

-*Makara*) ornamentation in stucco around the main wall-statues (Plate XIII, Na-ko); and (v) wood-carvings, *e.g.* of Buddhas in antique Indian style (Plates XVIII, XXXVIIa), other fine examples of which the writer saw in 1923 at Che-glin, Lahul (two large Buddhas), and in 1924 at Lha-lun, Spiti (a lintel-beam with panels depicting stages of Gautama's career). Other temples and chortens of this period have come to light after 1909, and many others are named in records. In conclusion, these eleventh-century temples brought to notice by Francke may be said to be the greatest achievement of Buddhist art in West Tibet, and to form an important link between Indian and the later Lamaist art, while the inscriptions which he found at Ta-bo, Alchi and Li-kyir afford valuable contemporary or early corroboration as to kings and lamas of Ladakh and Gu-ge, mentioned in later literature.

Of temples of still earlier times little actually remains today apart from sites, names and traditions. Francke points out that the Sanskrit names of Meru, Sakti, Tar in Ladakh, also Kanika (Kanishka), Muni in Zangskar, and others (as Gandhola in Lahul, where at Kyelang Kanika occurs again as a field name), probably date from the days of Indian Buddhism. The Indian ascetic Naropa (tenth century?) is the reputed founder of the well-known Buddhist monastery at Lamayuru, an old sanctuary of Bon-po days, and is associated with several sites in Zangskar and at Srinagar. He introduced into West Tibet the Bkah-rgyud-pa order, that in the sixteenth century merged into the Hbrug-pa sect, now the largest in Ladakh. The Ste-sta Chronicle (Vol. II, page 156) indicates that Zangskar was under Kashmir rule before the Tibetan conquest, *c.* 900 A.D., and the deeply cut rock-carvings near Padam, as noted in *A History of Western Tibet*, pages 21-2, may be the work of Kashmiri monks.

Special attention was paid to early inscriptions in Indian scripts,

notably to those in Brāhmī, late Gupta, early Sāradā, and Kharoshthī at Khalatse on rocks, and in Sāradā at Dras on the tenth-century Buddhist stele sculptures, first noticed by Vigne. Impressions of these inscriptions, on expert examination, disclosed some personal Indian names.

Epigraphy dated the peculiar type of "Mon" chorten, thought to be Bon and numerous near Rgya, Ubshi and Martselang, to *c.* 700-900 A.D. (Plates XXVIb, XXXIa). To the same period Francke attributes certain of the stone sculptures common near Leh and elsewhere (Plates XXXII, XXXIV), as well as many ruined castles and burial chambers. He holds that in Ladakh the term "Mon" often means Dard (Hbrog-pa). The cephalic indices of dolichocephalic skulls from the Teu-gser-po stone burial cells near Leh, which also contained pottery, bronze, iron and one gold object (Plates XXVIII, XXIXa), are characteristic of heads known to be Dard, so other similar burials near Rong (map, Latho) and Rgya appear to be Dard. Not a few place-names in Ladakh, such as Hemis, Hanu, Esu, etc., are noted as being of Dard origin. Shallow rock-carvings, dating back to pre-Buddhist Bon times, of ibex, svastikas, the holy willow, the sun, at Lha-ri, Spiti and Dongga, west of Kargil (Plate XLIV), represent a type common also in Lahul and Zangskar. Francke's notes on such remains, and on religious survivals and folk-lore, especially the Gesar myth, open up a wide and almost new field of pre-Buddhist research.

On this journey Francke directed his attention mainly to the more ancient remains, but he also describes the later structures, monasteries and *māni*-walls, which were erected in great numbers, especially in the seventeenth century. King Sen-ge-rnam-rgyal's reign (*c.* 1590-1635 A.D.) was a period of great building activity in Ladakh. Francke acquired a number of small antiquities, detailed in Appendix A, of which 79 went to the Indian Museum, Calcutta,

and 78 to the Pratab Singh Museum, Srinagar, as well as manuscripts and wood-prints, 26 from Ladakh and 19 from Lahul, together with 19 collections of folk-lore (Appendix B). This archæological survey was almost entirely confined to objects above ground, as popular superstition and the veto of the Kashmir State stood in the way of regular excavation; moreover, inhabited buildings often covered ancient sites.

It was only Francke's intimate acquaintance with the people and with local history and archæology, his mastery of Tibetan and untiring zeal that made it possible for him in a brief four months' tour over so extensive and difficult a terrain to gather the remarkably rich and varied harvest of important information set forth in this volume. The success of this tour in 1909 suggests the regret that the countries of Gu-ge, Lahul, Zangskar, Nubra and Baltistan also were not similarly surveyed and described in another book. But, as it is, Dr Francke's two volumes, his *Personal Narrative* and *Chronicles*, published by the Archæological Survey of India, together constitute the most important contribution that has yet appeared on the archæology of Indian Tibet.

H. Lee Shuttleworth.

(*f*) INFERENCES FROM CHEMICAL ANALYSIS

Apart from the work on the preservation of antiquities and monuments as detailed in Chapter II(*d*), chemical examination and analyses of a considerable number of ancient specimens from the excavations have been carried out by the Archæological Chemist. The results of these analyses have generally been full of meaning and led to important conclusions. For instance, the analyses of the specimens from Mohenjo-Daro and Harappa have thrown a

flood of light on the state of material civilization which existed in India in the fourth and third millennia B.C. As it is beyond the scope of this work to discuss the full implications of the whole analytical data, only a résumé of the more interesting conclusions is given here.

(i) *Copper and its Alloys.*—There is no doubt that metallurgy and metal working have been practised in India from time immemorial. The analyses of specimens from the earliest levels have proved beyond doubt that bronze was in use in the middle of the fourth millennium, and copper much earlier, in the Indus valley. The analyses have revealed also that Indus bronze is generally poor in tin, and objects containing over 10 per cent. tin are few and far between. These facts point to the scarcity of tin, and explain also why bronze casting did not make satisfactory progress in these epochs. The use of lead in bronze for casting appears to have been unknown to the Indus people. However, the microscopic evidence shows that they were adepts in bronze forging. An alloy of arsenic and copper was commonly employed by them as a substitute for bronze.

It is now recognized that certain impurities in copper objects are characteristic of original sources of the metal. It has been found that Indian specimens generally contain small, but appreciable amounts of arsenic and of nickel, and these may be regarded as their characteristic. Since these impurities are also present in the ores from some of the most important mines in India, it is obvious that these ancient objects were manufactured from indigenous sources, also that Indian metallurgy is of great antiquity. Passing on to the first millennium B.C., we find that metallurgy has made great strides. Iron is in common use, while brass and a nickel-copper alloy also make their appearance. There is abundant supply of tin, so that bronze casting constitutes a flourishing industry,

while *cire perdue* process is widely employed. Lead has been introduced as a useful ingredient in bronze for casting. This progress in metal industry was maintained in the first millennium A.D., when brass, bronze and speculum metal were commonly employed. The excellence of bronze casting is apparent not only at Taxila but also from the beautiful figures found at Nālandā, Kurkihar and South India. The analyses of bronzes from Baluchistan, Hazaribagh and South Indian graves are also of special interest.

(ii) *Mortars.*—Ordinary mud was the mortar commonly employed in ancient times in India. At Mohenjo-Daro and Harappa gypsum mixed with sand was also in general use, especially for pointing the joints of bricks. Lime mortar is met with occasionally.

(iii) *Ceramics.*—Faience objects are quite common in the Indus sites, but at Taxila it occurs rarely. It consists mostly of silica and alkalis to a lesser degree. Small proportions of alumina, ferric oxide and alkaline earths, which are also present, were probably introduced as impurities. It resembles Egyptian faience in composition, although superior in texture. Its composition is also comparable with the body material of Kashi (Mughal) glazed tiles, which is also composed mostly of silica and siliceous cement. It is, therefore, quite conceivable that the ancient tradition of faience technique has been handed down in India to almost modern times. It was probably prepared in the form of a paste consisting of finely ground sand and alkaline silicate, which provided the necessary adhesion and plasticity. The moulded object was probably dried, coated with glaze slip and fired. Sometimes steatite was substituted for sand, in the Indus Valley.

Objects carved out of steatite are found abundantly on the Indus valley sites. They were generally burnt to enhance their hardness or durability. This fact has been revealed by analysis, since the change takes place with the loss of water from this substance. It is

noteworthy that the white porcellaneous slip found on the 'seals,' etc., has also the composition of steatite.

Besides the common light red pottery, black or grey and cream-coloured (with a greenish tinge) varieties are also met with frequently on Indian sites. The black or grey colours are generally believed to be due to ferrous oxide, which is produced by the reducing gases generated in the kiln when the supply of air is insufficient for proper combustion of the organic fuel. Lucas has recently disputed the existence of ferrous oxide. The analyses of grey pottery carried out in this laboratory, however, prove the presence of substantial proportions of ferrous oxide in them. It is also evident that the red specimen from the same locality has identical composition, except that it is free from ferrous oxide. There seems to be no doubt regarding the reduction of ferric iron to the ferrous state in grey pottery. The vitreous grey bangle from Mohenjo-Daro contains the whole of its iron in the ferrous state.

The cream-coloured pottery is found to contain an excess of lime and magnesia, which combine with ferric oxide in the course of burning, thus eliminating the development of red colour. Some of the vitreous pottery bangles found at Mohenjo-Daro and Harappa are also of white colour, which can be explained similarly.

(iv.) *Pigments.*—The colours employed for painting polychrome pottery found at Harappa and Mohenjo-Daro are white, red, green and black. The white pigment is composed of steatite and calcium carbonate, red is ferric oxide or ochre, and black is carbon or lamp-black. The green is free from copper, and is a silicate mineral containing iron compounds. It is, therefore, undoubtedly the 'green earth' which occurs in the Deccan Trap. Lumps of red and yellow ochres as well as the green earth have, in fact, been found at these sites. Orpiment and cinnabar also occur there, but their purpose can only be guessed. Red, yellow, black, green and white constitute

the simple palette of the Ajanta artists. Their composition is the same as mentioned above, but the analyses of the specimens of white pigment used at Ajanta show that it is composed of silicate minerals along with gypsum or calcium carbonate. In the old Sanskrit texts on painting it is also mentioned that conch shell (calcium carbonate), kaolin or certain other minerals (which cannot be identified) were ground up for this purpose. Since the composition of the white pigment and the silicate compounds present in it vary considerably, therefore, it is clear that the choice for the minerals for the preparation for this pigment was not limited at all. There is no doubt, as the analyses show, that conch, kaolin and gypsum were used, but it is evident also that other silicate minerals were freely employed. The analyses strongly suggest the use of feldspathic minerals such as exist abundantly in the local Deccan Trap rock. The priming was identical with the white paint, and ordinary lime mixed with fine sand was employed for the preparation of the painting ground.

(v) *Glaze and Glass.*—Small glazed objects of faience and steatite are commonly found in the Indus valley, the prevailing colours being bluish green and greenish blue, while purple, chocolate, and white shades occur in lesser degree. The blue and green glazes owe their colours to copper compounds, and purple, chocolate and black to varying proportions of manganese. Cobalt blue glaze occurs but rarely. However, it must be borne in mind that on most of the objects the glaze has disappeared by decomposition in the soil, and only traces of it can now be detected. The white glaze formed the primary material to which colouring agents were added, to produce the desired shades.

Glazed pottery is scarce in the Indus sites, but fragmentary specimens are frequently met with at Taxila and other Buddhist sites. In the Mughal period, however, the art of glazing on vessels

and tiles was practised on a large scale at various centres. Therefore, the composition of the Kashi glazed tiles from Chini-ka-Rauza at Agra is rather interesting. The blue glaze contains cobalt, and purple owes its colour to manganese. The green shades have been produced by the use of copper compounds, alone or with those of lead. Yellow and orange also contain lead compounds. The white glaze consists essentially of silicates of alkalis and alkaline earths, and is generally low in alumina and ferric oxide.

The earliest specimens of glass in India have been found at Taxila and other early Buddhist sites. Like the glazes, these are also composed of silicates of alkalis and alkaline earths with minor proportions of other oxides. They are generally blue, green, amethyst or colourless, but dark and opaque red varieties are also found frequently. They owe their colours to copper, iron and manganese, but are free from lead except in the case of the opaque red material. The last-mentioned variety is also found in South Indian graves.

MOHD. SANA ULLAH.

NOTES TO CHAPTER III (*a*)

[1] Bruce Foote did much to elucidate Indian prehistory, in which he was one of the early pioneers. See his *Indian Prehistoric and Protohistoric Antiquities*, Madras, 1916.

[2] The Billasurgam caves are supposed to mark the habitations of the Palæolithic cave-dwellers.

[3] On the manufacture of stone implements, see Longhurst's note based on finds at Demaketiapalle in Anantapur District, Madras. *A.R. Arch. Dept., Southern Circle*, 1914-15, p. 39.

[4] *Catalogue of Prehistoric Antiquities in the Indian Museum*, 1917, p. 1.

[5] See preliminary reports in *Proceedings of the American Philosophical Society*, Vol. LXXVI, No. 6, 1936, and *Miscellanea of the American Philosophical Society*, Vol. I, No. 2, 1936; also *Current Science*, Vol. V, No. 1, 1936.

[6] *Journal of the Bihar and Orissa Research Society*, 1917, p. 349.

[7] See especially V. A. Smith, 'The Copper Age and the Prehistoric Bronze Implements of India,' *Ind. Ant.*, Vol. XXXIV, p. 229, and Vol. XXXVI, p. 53.

[8] *J.A.S.B.*, N.S., Vol. XI, 1915, p. 1.

[9] For the earlier literature see H. C. Das-Gupta, 'Bibliography of Prehistoric Indian Antiquities,' in *J.A.S.B.*, N.S., Vol. XXVII, 1931, No. 1.

[10] Besides the implements there are a number of cave-paintings which have been discovered at Chakradharpur, Singanpur, Mirzapur and elsewhere (*Mem. A.S.I.*, No. 24). Some of these may be of prehistoric origin, but it is difficult to refer them to any particular period.

[11] *A.R., A.S.I.*, 1923-24, p. 47.

[12] *A.S.R.*, Vol. V, 1875, p. 105.

[13] *A.S.R.*, Vol. V, pl. XXXIII.

[14] *Annual Report of the Superintendent, Archæological Survey, Hindu and Buddhist Monuments, Northern Circle*, for 1921.

[15] *A.R., A.S.I., Western Circle*, for 1920, p. 80 and Plate IX.

[16] *A.R., A.S.I.*, 1922-23, p. 103.

[17] *Illustrated London News*, September 20, 1924.

[18] *Ibid.*, September 27, 1924.

[19] *Ibid.*, October 4, 1924.

[20] *A.R., A.S.I.*, 1904-5, p. 105.

[21] *Mem. A.S.I.*, No. 35.

[22] *Mem. A.S.I.*, No. 37, *Archæological Tour in Waziristan and Northern Baluchistan*; No. 43, *An Archæological Tour in Gedrosia.*

[23] *Innermost Asia*, Vol. II, p. 949.

[24] It was first noticed by Noetling of the Geological Survey in 1898.

[25] This site was first explored by Major Mockler in 1875.

[26] *Mohenjo-Daro and the Indus Civilization*, Vol. I, p. 97.

[27] *A.R., A.S.I.*, 1925-26, pp. 98, 99.

[28] *A.R., A.S.I.*, 1927-28, p. 76; *Mem. A.S.I.*, No. 48, p. 5.

[29] *Mem. A.S.I.*, No. 48, *Explorations in Sind.*

[30] *A.R., A.S.I.*, 1926-27, p. 97; 1927-8, p. 83; 1928-29, p. 76; 1929-30, p. 121; 1930-34, p. 72.

[31] *Census of India*, 1931, Vol. I, Part III, p. lxviii; and *An Outline of the Field Sciences of India*, ed. S. L. Hora, 1937, p. 127.

[32] *A.R., A.S.I.*, 1929-30, p. 131.

[33] *A.R., A.S.I.*, 1930-34, p. 106.

[34] *A.R., A.S.I.*, 1934-35, p. 34.

[35] For a brief acount of the discoveries, see Mackay, *Indus Civilization*,

London, 1935. An authoritative popular account in Bengali by K. G. Goswami has been published by the Calcutta University in 1936.

[36] *Mem. A.S.I.*, No. 48, *Explorations in Sind.*

[37] *Bulletin of the Museum of Fine Arts,* Boston, Vol. XXXIV, 1936, No. 205, p. 83, and *Illustrated London News,* November 14 and 21, 1936.

[38] *A.R., A.S.I.*, 1902-3, p. 104; *Catalogue of Prehistoric Antiquities from Adichanallur and Perumbair,* 1915.

[39] *J.R.A.S.*, 1902, p. 166.

[40] *A.R., A.S.I.*, 1904-5, p. 41, and 1908-9, p. 92; and *Catalogue of Prehistoric Antiquities from Adichanallur and Perumbair,* 1915.

[41] *Annual Report of the Archæological Department, Southern Circle,* Madras, 1910-11, p. 10.

[42] *A.R., A.D., Southern Circle,* 1910-11, p. 12.

[43] *A.R., A.D., Southern Circle,* 1913-14, p. 43.

[44] *A.R., Southern Circle,* 1914-15, p. 39.

[45] *Journal of the Royal Anthropological Institute,* Vol. LIV, p. 140.

[46] *Journal of the Bihar and Orissa Research Society,* Vol. I, p. 229.

[47] *Census of India,* 1931, Vol. I, Part III, p. lxvii.

CHAPTER IV

EPIGRAPHY

(*a*) PRAKRIT AND SANSKRIT INSCRIPTIONS

INSCRIPTIONS of Ancient India are found recorded on a variety of materials. They have been engraved on (1) metals, (2) stone, and (3) various other substances.[1] As regards metals, they are found incised not only on copper, brass, bronze and iron, but also on silver and gold. For the most part, however, the known inscriptions on metal were placed on sheets of copper, varying in size. The most numerous of these, again, are donative charters, issued by kings, feudatory chieftains, provincial governors or any high officials who had the authority 'to alienate state lands and to assign allotments from the state revenues.' They were, in fact, title-deeds, and passed into private custody as soon as they were issued. They are commonly known as *tāmra-paṭṭikā* (copper tablets) or *tāmra-śāsana* (copper charters). Most of these records are full of genealogical information, whether of the donor or of the donee. They contain more or less detailed recitals of events, magnifying the glory and importance of the grantors and commemorating the achievements of the grantees. They have thus become a fruitful source of the history of Ancient India.

As regards the second material used for inscriptions, *viz.*, stone, they are recorded on it in various forms. But the great bulk of them are found engraved on rocks and pillars and in caves. Of the rock and pillar inscriptions, again, the most famous are those of Asoka. The rock inscriptions of Asoka are mostly found incised on the

boundaries of his wide dominions. They present two series of his edicts, the more important of which is known as the Fourteen Rock Edicts of Asoka. The most notable of the inscribed rocks of this monarch is that at Girnar, because it contains, beside the edicts of Asoka, a record of the Mahākshatrapa Rudradāman, dated A.D. 150, and another of the Gupta king Skandagupta, dated A.D. 454 and 457, both relating to an irrigation tank excavated and enlarged in the time of Asoka's grandfather Chandragupta and recording the repairs to the breach in the dam twice caused by excessive rains. Of the pillar inscriptions of Asoka the most important are those which are incised with the well-known Seven Pillar Edicts of the monarch.

As regards the cave inscriptions, the earliest are those in the Barabar Nagarjuni Hills in the Gaya district in Bihar, recording the dedication of the same to the monks of the Ājīvaka sect by Asoka and his grandson Dasaratha. The next in point of age is the Hathigumpha cave near Cuttack in Orissa, which contains an inscription giving a succinct account of the career of king Khāravela of Kalinga from his birth to the thirteenth year of his reign in such a manner as to show that we have here a summary of the initial portion of a chapter from some dynastic chronicle, compiled apparently from the day-books of his reign. From caves at Nasik, Junnar and Karli we have obtained a number of valuable records of the Mahākshatrapa or Great Satrap Nahapāna Kshaharāta and his son-in-law Ushavadāta and of Gautamīputra Sātakarni and his son Vāsishthīputra Pulumāvi, which throw a flood of light on the political, social and religious history of western India in the first and second centuries A.D.

Of the remaining substances on which inscriptions are found engraved, mention may be made of crystal, earthenware, and, above all, clay, which is 'sometimes left to harden naturally, sometimes apparently hardened by some artificial means, and sometimes baked

into terra-cotta or burnt into brick.' As regards this substance a large number of interesting clay seals were unearthed during the excavations carried out by the late Dr. T. Bloch in 1903-04 at the ancient Vaisālī or modern Muzaffarpur in Bihar.[2] The most important of these was that of Dhruvasvāminī, queen of the Gupta sovereign Chandragupta II, and mother of Govindagupta. There were, again, seals not only of private individuals, of temples, of guilds and corporations, but also of officials. Some of these last bear legends which mark them as having been issued at Vaisālī, which is situated in Tīrabhukti, modern Tirhut.

Almost all the inscriptions prior to *circa* 450 A.D. have been found written in two main scripts—the Brāhmī and the Kharoshthī. The first of these was written from left to right like all the Hindu scripts of modern date. The Kharoshthī was, like the Persian or Arabic script, written from right to left. The Brāhmī was prevalent throughout the whole of India, whereas the Kharoshthī was only in the Gandhāra province, which included Eastern Afghanistan and North-West Punjab. The Brāhmī, again, has developed into all the present India alphabets, including Devanagari, Kanarese, Tamil and Telugu as well as the Greater India scripts such as Tibetan, Burmese and Sinhalese. The Kharoshthī, on the other hand, was soon replaced by the Brāhmī in the province where it flourished, and no instance of an inscription engraved in Kharoshthī character has been found later than about the middle of the fifth century A.D. As regards the origin of the Brāhmī, some scholars have derived it from the Phœnician alphabet of the seventh or sixth century B.C., and have ascribed this importation of Semitic letters to the Dravidian merchants who are mentioned in the Buddhist Jātakas as trading as far west as Baveru or Babylon.[3] This theory might reasonably be called in question; but there cannot be even the shadow of a doubt as to the Kharoshthī being a form of the Aramaic or Syrian character

introduced into Gandhāra by Darius, son of Hystaspes, about 500 B.C., after his conquest of that province. As regards the discovery of the two alphabets, the decipherment of the Kharoshthī was anterior to that of the Brāhmi. It was Charles Masson who first hit upon the Kharoshthī signs for the letters comprised in such names and words as Menander, Apollodotus, Basileus and so forth, on the coins of the Indo-Bactrian kings, but the work of discovering the other characters and submitting the whole Kharoshthī alphabet to a thorough revision was accomplished by James Prinsep, Assay Master of the Calcutta Mint. But this task of determining the value of the Kharoshthī characters was comparatively simple, for here a distinct clue was afforded by the bi-lingual legends—that is, the Greek legend on the obverse and a Kharoshthī of the same import on the reverse—of the Indo-Bactrian coinage. If, however, the Egyptologists are proud of Champollion, who first discovered the hieroglyphic signs with the help of the Rosetta Stone, bearing a hieroglyphic inscription on one side and a Greek corresponding to it on the other, the Indologists may very well be proud of Masson and Prinsep, who read the Kharoshthī alphabet by an exactly similar process. But how exceedingly proud must the Indologists be of this same James Prinsep, who, without such extraneous aid, unravelled the value of the larger portion of the Brāhmī alphabet, in which the famous edicts of the Maurya emperor Asoka and the well-known coins of the Western Kshatrapas were engraved, and the decipherment of which baffled the ingenuity of all antiquarians since the time of Sir William Jones! The ecstatic exclamations into which the Assay Master of the Calcutta Mint was bursting as he progressed with the decipherment of the Brāhmī script have been luckily preserved for us in his letters to his friend General Cunningham, who has very wisely printed two or three excerpts from them, which even now read like a romance.[4]

As regards the language of the inscriptions it may be remarked, curious though it may sound, that the earlier an inscription is, the greater is the likelihood of its being couched, not in Sanskrit as might naturally be expected, but in Prakrit, closely allied to the Pali of the Buddhist scriptures.[5] The earliest inscriptions heretofore discovered are the celebrated edicts of Asoka, and they seem to be written in three main dialects: (1) the official language, based upon the vernacular of Magadha, which was developed at the royal court of Pātaliputra and which was adopted wholesale in Madhyadesa and Kalinga; (2) the language of Uttarāpatha preserved in the Shahbazgarhi and Mansehra versions; and (3) the language of Dakshināpatha preserved in the Girnar copy. Things, however, were different soon after the demise of Asoka. Owing to the establishment of the political supremacy of the Maurya dynasty over practically the whole of India, all barriers which detached one province from another were broken and an interprovincial communication sprang up, which was at once brisk and frequent, with the result that soon after Asoka's death the necessity for a common language for the whole of India was keenly felt. Thus arose what is called the Monumental Prakrit, which was apparently the parent of the Māhārāshtrī and in which are found inscribed records which extend from about 150 B.C. to 250 A.D. and which are spread from Gujarat and the caves of the western coast of Amaravati at the mouth of the Kistna and the caves of Khandagiri in Orissa on the eastern coast, and from Sanchi and Bharhut in Central India to Banavāsi, the southern extremity of the Bombay Presidency, and Kānchi or modern Conjeeveram in the Madras Presidency. Of this period only three inscriptions are known which were written in Sanskrit. With the rise of the Guptas this language so completely took possession of the field as a vehicle of expression that it never thereafter relinquished it.

The importance of inscriptions for the history of Ancient India can scarcely be exaggerated. Even in the obscure fields of this historical activity the services of epigraphy are invaluable. To take one instance, the exact place where Buddha was born was for a very long time unknown. Buddhist scriptures no doubt told us that he was born in a grove of *sal* (*Shorea robusta*) trees, called Lumbinī-vana, as his mother was going from Kapilavastu, the capital of her husband's kingdom, to Devadaha, the town of her father's residence. But where was this Lumbinī-vana to be located? It was true that some clue had been afforded by the notices of the place by the Chinese pilgrims Fa-hsien and Hsüan-tsang. And, in fact, an attempt had been made by Cunningham and his assistants to locate it with the help of their itineraries, but without any success. And the world continued to be ignorant as ever before of the exact location of the birthplace of the founder of Buddhism. It was, however, in December, 1896, that a stone pillar was found by Dr. Führer, in the village of Paderia in the Nepal Tarai (jungle belt), three miles north of the tahsil (subdivision) Bhagwanpur of the zillah (district) Butoul. Suspecting that the pillar might contain some inscription, he began to excavate round about it. He had hardly gone three feet below the surface of the ground when a record engraved on the pillar was exposed to view. The inscription tells us that Asoka had come to this place in person twenty years after his coronation, performed worship and freed the Lumbinī village from all taxation, just because 'here the blessed one was born.' The site of the pillar also is still known as Rummindei, the first component of which, namely, Rummin, doubtless corresponds to Lumbinī. It is thus an epigraphic record which has settled the exact location of the place where Buddha first saw the light, neither the description of the place in the Buddhist works nor the itineraries of the Chinese pilgrims being of any value.

If in such an obscure field as that of topography epigraphy can be

of immense use, its services in the more important fields of political, religious and social history of Ancient India cannot possibly be overrated. Probably the only political histories of Ancient India that have been so far written and that are worthy of being called 'history' are those that we find published in the *Bombay Gazetteer*, Vol. I and Pts. I and II. They are: (1) *Early History of Gujarat*, by Pandit Bhagwanlal Indraji; (2) *Early History of the Dekkan*, by Sir Ramkrishna Bhandarkar; and (3) *The Dynasties of the Kanarese Districts, etc.*, by J. F. Fleet. If anybody opens any one of the books and pores over a few pages thereof, he will be convinced of the fact that, for most of the information supplied by it, the work is indebted to inscriptions and inscriptions only. Numismatics have no doubt helped in the compilation of this history; but taken as a whole, numismatics have not been found so serviceable as epigraphy for the political history of Ancient India. Inscriptions again sometimes throw a most unexpected light not only on the internal politics of India but also on the part she played in the international politics of the old world. Let us for a moment concentrate our attention on the edicts of Asoka and find out what they teach us in these respects. Now the peculiarity of Asoka's Rock Edicts is that they are found on the frontiers of his dominions (see p. 132). Thus two have been found at Shahbazgarhi and Mansehra in the North-West Frontier Province, one at Kalsi in the Dehra Dun district, United Provinces, one at Girnar in the Junagarh State, Kathiawar, one at Sopara in the Thana district, Bombay Presidency, two at Dhauli and Jaugada in the Orissa Province, three in the Chitaldrug district, Mysore, and one at Yerragudi, in the Kurnool district, Madras Presidency. This alone gives us a clear idea of the very wide extent of the territory held by Asoka. This is corroborated by the fact that the Chodas, Pāndyas, Keralaputra and Satiyaputra are the only independent rulers that are mentioned as existing in India in his

time. And these, we know, held territories mostly along the sea coast of the Madras Presidency. Asoka was thus a real emperor of practically the whole of that sub-continent which is called India. But this is not all, because Asoka speaks also of five Greek potentates whose kingdoms lay outside India and to whose courts he sent envoys. They were (1) Antiochus (II) Theos of Syria, (2) Ptolemy (II) Philadelphos of Egypt, (3) Antigonus Gonatas of Macedonia, (4) Magas of Cyrene, and (5) Alexander of Epirus, or, more probably, of Corinth. How could India have been drawn into this *entente cordiale* with the Hellenic states of the civilized world unless we suppose that the Mauryan State diplomatically, militarily and culturally was on grounds of equality with them? Dr. George Macdonald, in the chapter on the Hellenic Kingdoms which he has contributed to the *Cambridge History of India*, Vol. I, page 433, is, I suggest, right in saying on the testimony of Strabo that the Oxus (Amu Darya) formed a link in an important chain along which Indian goods were carried to Europe by way of the Caspian and the Black Sea. That India was in such intimate and frequent intercourse with the western world follows also from what Asoka says in Rock Edict II. It is here that the Buddhist monarch tells us that he imported and planted many and new medicinal herbs, roots and fruits for the good of man and beast, not only in India and Ceylon, but also in the Greek kingdoms just referred to. But how could Asoka have carried out this philanthropic work in the empires of the Greek potentates which were spread over the whole of western Asia, eastern Europe, and northern Africa unless we suppose that India and this western world were firmly and closely knit together by safe and well-guarded sea and land routes? Thus the inscriptions of Asoka reveal the fact, not known from any other source, that the Mauryan supremacy had ushered in an age when imperial India could send embassies of her own to all the then civilized parts of

the globe and play an important rôle in a world-wide intercourse and activity.

It is scarcely possible within the compass of this chapter to form a critical estimate of the invaluable services which epigraphy has rendered to the political history of India. It has not only made a detailed and sustained history possible, it has not only shown what position India held in the international politics of the old world, but has many a time thrown a flood of light on many an obscure period in the ancient history of this country. To take one instance, for many years the period following the demise of Harshavardhana of Kanauj was a very dark one in the history of northern India. It was just a few years ago that the inscriptions, or rather a critical interpretation of the inscriptions, clearly proved that the whole of northern India was held by the imperial Pratīhāra dynasty for upwards of two centuries. But limitations of space prevent even our touching upon this subject, and we shall now proceed to show what light inscriptions have shed on the religious and the social life of Ancient India. Here also we have to be as brief as possible. What service epigraphy has rendered to the history of Vaishnavism and Saivism,[6] especially to that of Vāsudeva and Lakulīsa worship, is too well known to require any mention here. But perhaps the most interesting feature of this religious history is the lie it has given to the old belief that Hinduism was a completely non-proselytizing religion. The Karli, Nasik and Junnar Cave and other inscriptions have now proved beyond all doubt that all foreign hordes, such as the Sakas, Pallavas, Hūnas, Gurjaras, nay, even the civilized Greeks, succumbed to the charm of Hindu culture and religion.[7] A quarter of a century ago the late Mr. A. M. T. Jackson drew our attention to 'the attractive power of Hindu civilization, which has enabled it to assimilate and absorb into itself every foreign invader except the Moslem and European.'[8] They not only embraced one Hindu faith

or another, but, in many cases, adopted Hindu names also. To take one instance, there are some Nasik cave inscriptions which belong to Ushavadāta—*i.e.*, Rishabhadatta—and his wife Sanghamitrā. These are indisputably Hindu names. There is, however, another Nasik inscription which distinctly calls him a Saka. His foreign origin is indicated also by the names of his father and father-in-law—namely, Dīnīka and Nahapāna. The latter, again, has been designated Kshatrapa, which corresponds to Satrap, the anglicized form of a Persian title. It thus seems that Rishabhadatta and Sanghamitrā had become Hindus, though originally of foreign extraction.

Let us now see what Hindu faith they had adopted. Rishabhadatta is spoken of as having granted sixteen villages to the gods and Brahmans, accomplished eight Brahman marriages at the holy place Prabhāsa—*i.e.*, Somnath Pattan—and, above all, annually fed one hundred thousand Brahmans. It is difficult to find out even at the present day a more staunch Brahmanist than Rishabhadatta. And yet in origin he was a Saka, and, therefore, a foreigner. Even the civilized Yavana or Greek could not resist the charm of Hindu religion and culture. The most celebrated instance of it is provided by the Besnagar Pillar (Gwalior), for the discovery of inscriptions on which we are indebted to Sir John Marshall. One of these informs us that the pillar in question was a column surmounted by Garuda raised in honour of Vāsudeva by Heliodoros, son of Dion, a resident of Taxila and an envoy who had come from the Indo-Bactrian king Antialkidas to the court of the local prince Bhāgabhadra. Heliodoros and Dion are Greek names. Besides, the former has actually been designated in the inscription *Yona-dūta* or Greek ambassador. There can therefore be no doubt as to his being a Greek by nationality. And when he is represented as having erected a Garuda column in honour of Vāsudeva, the conclusion is natural that, though he was a Greek, he became a Vaishnava. If any doubt

remains on this point, it is set at rest by the fact that Heliodoros is called Bhāgavata, a devotee of Vāsudeva, in the inscription. The inscription thus proves that such was the might and charm of Indian culture and civilization that even a Greek of education and position, such as Heliodoros, being an ambassador, doubtless was, could become a convert to a Hindu faith and evince his religious zeal by raising a monument at great expense and of no small artistic merit.

We may now say a few words about the service rendered by epigraphy to the social history of Ancient India. Many are the questions of social interest on which light is thrown by inscriptions. We shall here restrict ourselves to only one of them, *viz.:* women as administrators and rulers in Ancient India. Purdah ('curtain') was prevalent in Ancient India probably with the same rigour in which it is at present in the various parts of the country. In spite of it we find that women rose to be administrators or rulers. It is no use taking our stand upon the Rāmāyana or the Mahābhārata, because epics, after all, are heroic stories narrated in an elevated style. We have to take our stand on historical records such as inscriptions unquestionably are. Now, there is an inscription at Bankapur in Dharwar, Bombay, which was originally comprised in the Banavāsi province. It is dated Saka 977 (1055 A.D.), and this Banavāsi province, we are told, was then being administered by a Kadamba chieftain, Harikesarideva, not alone and by himself, but jointly with his wife, Lachchaladevī. We have a similar and earlier instance in a Nasik Cave inscription, containing a grant of land to certain Buddhist monks by the Sātavāhana king Gautamīputra Sātakarni, not alone, but by him and his wife together. Further, we have an instance of a crowned queen issuing not one but two charters on her own authority, and without reference to her husband, supplied by Vijaya-mahādevī, *mahishī* (queen consort) of Chandrāditya, the elder brother of the imperial Chalukya king

Vikramāditya I of Vatāpi (Badami). Further, we have the instance of the wife of a suzerain, Sīla-Mahādevī, queen of Dhruva, a supreme ruler of the Rāshtrakūta family. She issued a charter in Saka 708 (786 A.D.), without any formal sanction of her husband, and styled herself *Paramesvarī Paramabhattārikā* in the imperial fashion. Nay, women could administer a kingdom when their sons were minors. Such were the rights and privileges enjoyed by women in early times. They could not only share, but also independently bear the responsibilities of the government in Ancient India.[9]

D. R. BHANDARKAR.

[For NOTES, see p. 220.]

(*b*) MUSLIM INSCRIPTIONS

Muslim epigraphy in India comprises the inscriptions in the Arabic, Persian and Urdu languages, which have a common alphabet and owe their introduction into the country to Muslims. The earliest settlement of Muslims in India had been at the close of the first century Hijra (eighth century A.D.), when Sind was conquered by the Arab general Muhammad bin Qasim, and as the central power of the Caliphs of Arabia failed to exercise any political control on this newly conquered territory, it constituted an independent state. Subsequently Karmatians, followed by Ghaznavids, overran Sind and the north-west part of India, which latter was incorporated as far as Lahore in the kingdom of the Ghaznavids. Unfortunately no epigraphical record of this period is available till the conquest of Delhi by the Ghorids in 1191 and the permanent establishment of a Muslim empire in the country. The Muslim epigraphy of India, therefore, begins with the last decade of the twelfth century A.D., and the oldest inscription, so far known (with the exception of those brought to India from other countries or inscribed after the nominal

dates), is that which is to be found on the east gate of the Quwwat-ul-Islam mosque at Delhi and is dated 587 A.H. (1191 A.D.).

Language.—The inscription mentioned above is in Persian, and with that of Balban dated 683 A.H. (1284 A.D.) on the mosque attached to the tomb of Shaikh Ahmad Khandan at Budaun it forms an exception to the epigraphs of the period, which are all in Arabic till the last decades of the thirteenth century. It may be remembered that the language spoken by the conquerors was Persian, which they introduced into India, adopted as the court language and maintained as a national tongue throughout the whole period of their rule in the country. Arabic had, however, the distinction of being the religious and literary language in the Muslim world, and was learnt by the believers as a pious duty in order to be able to understand their religious books and acquire the knowledge of Islamic law and traditions. The first buildings erected by the Muslims in India were generally mosques and tombs, and it is not surprising that they adopted their religious language for the epigraphs of these sacred memorials. Based as the use of Arabic in Indian inscriptions was on the religious sentiment, it could not successfully hold its ground long in the domain of epigraphy against Persian, which gradually replaced it. These remarks, however, apply only to historical inscriptions, while the religious ones are all in Arabic. Although the first Muslim inscription in India was written in Persian, it does not seem to have been regularly adopted for epigraphical record until the accession of the Khaljis (1290 A.D.), in whose epigraphs we find it freely used. The inscriptions of the subsequent period signify a still greater popularity of Persian, while the use of Arabic is noticed to have been almost entirely confined to inscriptions on mosques and tombs. The independent Muslim principalities, which sprang up in the outlying provinces about the end of the fourteenth century, were similarly affected by the influences

that had been working on art and literature in the central empire of Delhi. In Bengal, however, Arabic was favoured for epigraphs for a longer period, and almost all the inscriptions of its independent rulers are found in that language. The decline of Arabic was more remarkable during the Mughal period, when Persian was resorted to even for the inscriptions of mosques and tombs, and eventually it entirely replaced Arabic. This may partly be attributed to the Iranian influence which was brought to bear on the civilization of the country in general by the great influx of Persians into the Mughal court and the royal patronage extended to them. The Mughal period also marked the evolution of the Urdu language, which was to play a very prominent part in the realm of Indian epigraphy. It originated from the contact of Persian with the indigenous dialect, and developing steadily it succeeded, on the advent of the British, in taking the place of Persian as the court language. Thrown into the background for the purposes of practical life, Persian lost its importance, and, as had been the case with Arabic, it retained its position only as a literary language of Muslims. Urdu appeared in the Muslim epigraphy in the middle of the eighteenth century, and the first inscription in that language, so far known, is from Alamgir II, dated 1169 A.H. (1755 A.D.) and fixed on the west wall inside the tomb of Shaikh Nizam-ud-din at Delhi. It was, however, not until the downfall of the Mughal empire in the year 1857 that Urdu found favour for epigraphs, but since then it has been coming to the forefront and the majority of the modern Muslim inscriptions are in Urdu.

Except a few, all the Arabic inscriptions are in prose, and this is the case even in Arabic-speaking countries, where also epigraphs belonging to the period earlier than the seventeenth century are rarely in verse. The language of many of these inscriptions is defective, containing grammatical mistakes. There are also certain

epigraphs, partly in Arabic and partly in Persian. The early Persian inscriptions are mostly in prose, but later on, particularly during the Mughal period, verse is found to become more popular, and such epigraphs, composed generally in high-flown language, are indicative of the skill and elegant style of their authors rather than replete with much useful historical or archæological information. Dates, too, are often in puzzling chronograms.

Scripts.—As regards the script, all the early Muslim inscriptions are written in Naskh characters irrespective of their language, whether it is Arabic or Persian. Kufic style is also noticed, but it is confined only to religious inscriptions of a decorative nature, there being one or two exceptions[1] which are negligible. This style, which had been cultivated as an artificial script, was discarded entirely throughout the Muslim world by the thirteenth century; hence it is that the Kufic inscriptions are very rare in India, and those which exist are purely ornamental, belonging to the early Muslim period.[2] About the middle of the sixteenth century Nastalīq made its appearance in Indian epigraphy, and the earliest inscriptions known to us in this script are those of Burhan Nizam Shah of Ahmadnagar, dated 928 A.H (1521 A.D.), on a mosque at Ashti, district Bid, Hyderabad State,[3] and of Babar (1526-30), engraved on a marble tablet at the tomb of Amir Khusro in Delhi.[4] Gradually Nastalīq gained popularity, and in the nineteenth century it almost entirely replaced Naskh, which was reserved exclusively for religious inscriptions that were in Arabic. Apart from these three main scripts, the Muslim inscriptions in India represent many conventional styles, varying according to the periods and localities of those records. Noteworthy in this respect are the epigraphs of the Sultans of Bengal, whose script, although inherently Naskh, assumed a distinctive ornamental style. Similar is the case with the inscriptions in other provinces, which manifest the skill and the individuality of the

local calligraphists of the periods concerned. In India the Muslim inscriptions played a very important part in the field of decoration, and this use of them was responsible for their artistic treatment, which sometimes gave them such a fantastic shape as to render them difficult to read. Thus they supply the most authentic and best specimens of calligraphy of different periods, and at the same time offer immense material for researches in the Muslim palæography of the country.

Nature and Subject of Inscriptions.—Muslim inscriptions of India may be divided into three classes, *viz.*: (*a*) historical, (*b*) religious and (*c*) ethical. The epigraphs referring to any event or bearing the names of rulers or dates are treated under the class (*a*), whereas those which contain quotations from the Holy Qurān or Hadīs (sayings of the Prophet), or any pious ejaculation fall under the class (*b*). The ethical inscriptions comprise Persian and Arabic verses, usually quotations from well-known poets, imparting moral advice. The religious inscriptions are very numerous, and they are to be found on sacred buildings such as tombs, mosques, etc. An idea of their multiplicity can be formed from the fact that recently the Archæological Department made a survey of such inscriptions on the protected monuments of Delhi, which are not more than 124 in number, but are found to bear as many as 887 religious and ethical epigraphs. The result of the survey has been published in the Archæological Memoir No. 47, and it indicates the particular verses of the Holy Qurān and the religious formulæ which had been popular in different periods for inscribing on various kinds of sacred memorials. Such inscriptions throw a side-light on the religious beliefs of their authors, and a careful study of them is expected to be helpful in tracing the history of the various sects of Islam in India.

The principal inscribed objects which have so far received atten-

tion are structural monuments, and only a small percentage of them have been subjected to epigraphical examination. In addition to them there are countless removable antiquities which bear inscriptions of equally historical and archæological interest. They include arms, articles of domestic use, seals, signets, amulets, etc. Inscriptions on several guns[5] as well as on a few swords[6] have already been published and a systematic search will bring many antiquities of this class to notice. Regarding seals and signets, it may be mentioned that during the Muslim rule every state official had to maintain a signet for stamping official documents, and those seals were renewed on the change of sovereignty. They were designed by professional artists and calligraphists and were often fine specimens of art. The actual seals and signets are rare, but impressions of a large number of them are noticed on ancient documents, many of which are still available, although fast disappearing. The study of seals and signets will also be helpful in historical researches, supplying information about the officials not mentioned in the contemporary chronicles. The popular amulets were worn as ornaments, and as they were carved very artistically they possess palæographical interest. Mention may also be made here of the state documents known as *farmans*, etc. Strictly speaking, they do not fall under the category of inscriptions, but with regard to their subject-matter they are similar to copper-plates of the Hindu period, and they were also in mind when the scheme of publishing epigraphical records in India was conceived and brought into effect by instituting the *Epigraphia Indica*. These documents, referring to grants of land or cash stipends and to royal mandates of various natures, supply valuable historical information which cannot be overrated. Inscribed as they are on paper, which is so perishable, a large number of them has been lost, but many are still to be found in private ownership, and it is desirable that a proper arrangement be made for their col-

lection, preservation and critical study, before they disappear for ever. This short survey shows the abundant material which the Muslim epigraphy of India offers for exploration, but it is regretted that the attention paid to it has been very inadequate, and there remains much to be done in that line.

Past and Present of Muslim Epigraphy.—Soon after the advent of the British, the Muslim inscriptions of India engaged the attention of European scholars, and such civil and military officers as were equal to the task undertook the spade work of publishing them in the Asiatic journals. Some of the Indian scholars too, who came in contact with those officers, received this inspiration, and the results of their labour are evidenced in certain topographical works dealing also with inscriptions. The most remarkable of these works are the *Sair-ul-Manāzil* and *Āsār-us-Sanādid* on the archæology of Delhi. The former was written in Persian by one Sangin Beg at the instance of Sir Theophilus Metcalfe and Mr. William Fraser about 1835, and besides the historical and descriptive accounts of the important ancient buildings in Delhi, it contains the copies of the inscriptions engraved on them. *Sair-ul-Manāzil* has not been published, but a manuscript copy of it is preserved in the Delhi Museum of Archæology, and another copy is in the possession of the writer of this article. The *Āsār-us-Sanādid* is in Urdu: its author, Sir Sayyid Ahmad Khan, the founder of the Aligarh College (now a University), did not content himself with only giving a copious account of the Delhi monuments, but also illustrated his book with the drawings of certain prominent buildings and the facsimiles of their inscriptions, which were prepared by the local artists. He wrote in the preface of the second edition that a copy of his book, which was first printed in the year 1846, was taken by Mr. A. A. Roberts, the then Collector and Magistrate of Shahjahanabad (Delhi), to England and presented to the Royal Asiatic Society.

The publication received much appreciation, and Colonel Saxzon, a member of the Court of Directors of the East India Company, made a suggestion for an English translation. This work, which was undertaken by Mr. Roberts himself on his return to India, was not brought to completion, but the author revised his book and published a second improved edition of it in 1854. *Āsār-us-Sanādid* has the distinction of being the first publication which contains the facsimiles of Muslim inscriptions of India. Another work worthy of notice on the subject is the *Miftāh-ut-Tawārīkh*, which was written in Persian by Mr. Thomas William Beale, a clerk in the office of the Board of Revenue, North-Western Provinces of Agra and Oudh, and published in 1849. It contains a collection of chronograms, together with the inscriptions on certain ancient buildings in India.

The activities of the Archæological Department, constituted in the year 1862, were originally restricted to the survey of ancient monuments, and such Muslim inscriptions as had been borne by those monuments were printed in the periodical reports or monographs published in that connection. Subsequently, when the *Epigraphia Indica* was started with a view to collecting and publishing epigraphical records in one place, Muslim inscriptions formed a component part of the scheme, but that periodical happened to be mostly devoted to Hindu antiquities: out of its seven volumes, which form the *Imperial Series* and cover the period from 1888-1903, it is only the second which is found to deal with a few Muslim epigraphs. This defect was, however, realized, and in 1903 a part-time post of Epigraphist for Muslim Inscriptions was created to publish a record in a separate journal, to be entitled *Epigraphia Indo-Moslemica.* The first issue for the year 1907-8 was published under the editorship of Dr. (now Sir) E. Denison Ross; it contained four articles on certain inscriptions in Gulbarga, Berar, Fort of Daulatabad, Hyderabad and Golconda City by Major (later Lieut.-

Colonel) Sir T. Wolseley Haig. The post was later transferred to the late Dr. J. Horovitz, then Professor of Arabic in the Muhammadan Anglo-Oriental College, Aligarh, who was responsible for the second issue for the year 1909-10. Dr. Horovitz made a survey of the Indian Muslim inscriptions that had already been published, and printed its results in the form of a detailed list, which does great credit to his scholarship and experience in epigraphical work. The list includes 1,265 inscriptions collected from numerous English, Persian and Urdu publications, and it is prefaced by introductory remarks containing a discussion on the various phases of those records and the conclusions drawn from them. He also placed the *Epigraphia Indo-Moslemica* on a scientific footing, furnishing it, like the *Epigraphia Indica*, with facsimiles of the inscriptions dealt with in the letter-press. Following the system of the publication of *Corpus Inscriptionum Indicarum* (see Chapter VI), that eminent scholar seems to have conceived the idea of collecting and publishing the Muslim epigraphs in accordance with dynasties and rulers, as is indicated in his article on 'The Inscriptions of Muhammad Ibn Sam, Qutbuddin Aibeg and Iltutmish,' published in the *Epigraphia Indo-Moslemica* for 1911-12. The project was too ambitious, for the study of Indian Muslim epigraphy had not yet reached a stage to admit of such an undertaking. The scheme was pursued by Mr. Ghulam Yazdani, the Director of Archæology in Hyderabad State, who succeeded Dr. Horovitz as Government Epigraphist for Muslim Inscriptions. In connection with this scheme Mr. Yazdani published an article on 'The Inscriptions of the Turk Sultans of Delhi—Muizzu-d-Din Bahram, Alau-d-din Masud, Nasiru-d-din Mahmud, Ghiyathu-d-din Balban and Muizzu-d-din Kaiqubad' in the 1913-14 issue of the journal, but thereafter he discontinued it.

Since its inception in the year 1907, fourteen issues of the

Epigraphia Indo-Moslemica have been published, dealing with 495 inscriptions. The majority of these inscriptions, numbering 234, are from the Hyderabad State, while the other provinces are poorly represented. This, however, is not an index to the epigraphical wealth of the provinces, in which respect northern India, comprising the Punjab, Delhi and the United Provinces, possesses the greatest importance. While the *Epigraphia Indica*, reserved for Hindu epigraphs, publishes four issues in a year, the *Epigraphia Indo-Moslemica* is biennial, only one issue of it, practically of the same size as that of the *Epigraphia Indica*, appearing in two years, with an average of thirty-five inscriptions. The Government Epigraphist for Muslim Inscriptions is still only a part-time officer of the Archæological Survey. It cannot, however, be denied that the Archæological Survey realizes the importance of Muslim epigraphy, which is treated as a separate unit of its activities; but this branch merits greater attention. While the Archæological Survey deserves credit for giving some prominence to Indian Muslim epigraphy, it is sincerely hoped that before long the vast material it offers will be subjected to systematic exploration.

ZAFAR HASAN.

[For NOTES, see p. 221.]

NOTES TO CHAPTER IV (*a*)

[1] For a detailed treatment of the materials on which inscriptions are incised, see J. F. Fleet's article on 'Epigraphy,' published in *Imperial Gazetteer*, Vol. II, pp. 24 ff.

[2] *A.S.I., An. Rep.*, 1903-04, pp. 107 ff.

[3] This whole question has been treated in my paper on 'Origin of the Indian Alphabet,' published in *Sir Asutosh Mookerjee Silver Jubilee Volumes*, Vol. III, Pt. I, pp. 493 ff. See also *I.A.*, Vol. XLVIII, pp. 57 ff.; *J.P.A.S.B.*, 1921, pp. 209 ff.; and *Calcutta Review*, 1923, July-September, pp. 354 ff.

[4] *A.S.I.R.*, Vol. I, Intro., pp. ix and x; one letter of Prinsep's ends with *Chulao bhai, juldee puhonchoge,* which Cunningham annotates with: 'This is the common exclamation of palki bearers to encourage one another—Go on, brother, we shall soon get there!'

[5] This point has been treated at length in my *Asoka* (2nd ed.), pp. 297 ff.

[6] R. G. Bhandarkar's *Vaisnavism, Saivism and Minor Religious Systems* (Ency. Indo-Aryan Res.), pp. 3-4, 42-44, 119-20, etc. See also *J.B.B.R.A.S.*, Vol. XXII, pp. 15 ff.; *A.S.I., An. Rep.*, 1906-07, pp. 179 ff.; and *E.I.*, Vol. XXI, pp. 1 ff.

[7] This point has been dwelt upon by me in *Foreign Elements in the Hindu Population* in *I.A.*, Vol. XL, pp. 12 ff.

[8] *I.A.*, Vol. XXXIX, p. 77.

[9] This subject was first critically discussed by me in *E.I.*, Vol. XXII, pp. 100-2. A popular version of the same under the caption, 'Women as Administrators and Rulers in Ancient India,' was published in *The Hindustan Review*, Vol. LXIX, pp. 463 ff.

NOTES TO CHAPTER IV (*b*)

[1] See the inscription dated 596 A.H. (1199 A.D.) on the back wall of the Arhai-din-ka-Jhompra mosque at Ajmer, and the one on the southern mihrāb of Sher Shah's mosque in the Purana Qila of Delhi. The last epigraph consists of two Persian verses without any date, but it must belong to Sher Shah's time (1540-45), and in this respect it possesses great interest, as the use of Kufic script in inscriptions was given up at a much earlier date. It is perhaps the only instance of a Persian epigraph in India written in Kufic.

[2] See inscriptions on Altamish's extension of the Quwwat-ul-Islam mosque, and the tombs of Sultan Ghari (629 A.H. = 1231 A.D.) and Altamish (*circa* 633 A.H. = 1235 A.D.) at Delhi.

[3] See *Epigraphia Indo-Moslemica,* 1921-22, p. 29.

[4] *Ibid.*, 1915-16, pp. 5-6.

[5] See *Inscriptions on the Seikh guns captured by the army of the Sutledge,* 1845-6; *Memoir of the Archæological Survey of India,* No. 49, *Bijapur Inscriptions,* pp. 61-2; *Epigraphia Indo-Moslemica,* 1907-8, p. 14; 1927-8, p. 7; 1929-30, p. 18.

[6] *Annual Report of the Archæological Survey of India,* 1915-6, pp. 111-113.

[For Illustrations to this Chapter, see Plates XX and XXI.]

CHAPTER V

ARCHÆOLOGICAL MUSEUMS

THE East India Company is often, and quite unjustifiably, considered as a soulless trading concern more interested in profits and patronage than culture, and its officers as generally indifferent to things of the spirit. It is, therefore, well to be reminded that the first museum collection in India was founded as long ago as 1796—only forty years after the inception of the British Museum—and largely by the efforts of the Company's servants. In that year the Asiatic Society of Bengal decided to house in Calcutta the many curiosities it had accumulated; and in 1839 the Court of Directors of the Company, although already incurring considerable expense in maintaining a museum at the India House in London, sanctioned a grant for the salary of a Curator and the maintenance of the museum, and also authorized the making of grants from time to time for special purposes. In Madras as early as 1819 efforts had been made to form a museum; in 1846 the Company, 'impressed with the advantage of storing up in one place the knowledge and material which had been acquired by investigators working in different parts of the Peninsula and with the object of fostering scientific enquiries,' accepted the offer of the small collections of the Madras Literary Society, and the Central Museum was opened in 1851 at the College of Fort St. George.

Since 1858 the Imperial and Provincial Governments, the heirs and successors of the Company, have in varying measure continued this interest in museums, and at the present time spend some five lakhs of rupees (£37,500) on their maintenance.

A recent survey of the museums of India and Burma reveals the existence of about one hundred, and remarks in them a noticeable bias in favour of archæology and history; for no less than nineteen are devoted entirely to archæology and sixteen to historical material, while thirty-five other museums have archæological collections. Some of them, such as those at the Indian Museum, Calcutta, the Prince of Wales Museum, Bombay, and the museums at Madras, Lahore, Lucknow, Nagpur and Hyderabad, are extensive and of great importance.

This preponderance of archæological material is of comparatively recent date, for in the earliest Indian museums natural history took pride of place. Thus an observant visitor to the Indian Museum in 1847 describes it as 'a very rich collection particularly of quadrupeds and skeletons,' and remarks only casually, 'several sculptures and bas-reliefs were lying around.' Similarly it is definitely stated that the collection presented to the Madras Government consisted principally of geological specimens.

Indeed, archæology made little advance in Indian museums until Lord Canning in 1860 invested it with permanent Government patronage by constituting the Archæological Survey of Northern India, and later by appointing General Cunningham to be Archæological Surveyor. Cunningham's researches greatly enriched the collections in the Indian Museum and laid the foundations of the Gandhāra collections in Calcutta and Lahore.

Nevertheless, from this period the increase in the number of museums was slow, and even by the end of the nineteenth century there were only twenty-six in existence, and some of these had fallen into a deplorable condition. In 1899 a distinguished foreign visitor wrote to the Viceroy: 'At Delhi the museum is a howling wilderness that would shame by its dirt, neglect and incoherence any village. The labels are upside down, filthy, and beautiful things

jumbled up anyhow with refuse. It is a thing to be seen and wondered at.' Had the visitor seen the museum catalogue his wonder would have been still greater, for it enumerated among other astonishing objects, *a Hilly Woman's petticoat; 35 specimens of Sea Fogs; a Giant's shoe and a mountaneous bag*!

The opening of the new century, however, was marked by increased activity in the museum world due to Lord Curzon's interest in India's past and his reorganization in 1902 of the Archæological Survey; and the subsequent history of archæological museums in India is very largely the record of the then appointed Director-General of Archæology, Sir John Marshall. During his period of office archæological museums were founded at Bijapur, Baripada, Chamba, Ajmer, Khajuraho, Gwalior, Sanchi and Dacca, the Survey itself being responsible for establishing museums at Agra, Mandalay, Peshawar, Delhi Fort, Lahore Fort and New Delhi in addition to six others at excavated sites.

It is impossible to conclude this historical retrospect without stressing the debt that archæological museums owe to Lord Curzon. His policy sprang not merely from a personal interest in and love for the monuments of India, but was based on carefully reasoned principles, principles good for all time. In 1901 he strongly resisted attempts to transfer the whole Stein collection to London, maintaining that the argument that they would be more accessible there would justify the transference to London, Paris or Berlin of every interesting object of antiquity found in any out-of-the-way spot in India. He urged that the only way archæological knowledge could be widely diffused was by local museums, and that foreign scholars should be persuaded to come to India to study its treasures instead of allowing them to be swamped in the overstocked collections in London. The creation of local museums between 1899 and 1904 at Malda, Pagan, Mandalay, Bijapur, Agra and Peshawar was due

directly to him, and his interest in them lasted long after he left India; in 1924 and 1926 he made gifts to the Agra and Delhi museums.

It is still the policy of the Government of India to keep the antiquities recovered by excavation which cannot be preserved *in situ* in close association with the remains to which they belong. Local museums are maintained at Taxila, Mohenjo-Daro, Harappa, Sarnath, Nalanda and Pagan. The administrations of the Bhopal and Mayurbhanj States have followed this practice and have established similar museums at the excavated sites of Sanchi and Khiching. Although the population at most of these sites is scanty, the maintenance of these museums is entirely justified; for, if the student is to visualize aright the conditions of life in ancient India and infuse life and colour into the picture, he must see these antiquities against the background of the remains yielding them. Moreover, the display of these antiquities in appropriate buildings, well labelled and logically arranged, cannot fail to inspire the visitor with respect for both the exhibits and the monuments whence they emanate.

The most striking result of the operations of the reorganized Survey has naturally been the creation of the departmental museums in which are exhibited the antiquities recovered by excavation, but the effect of its general activities on the provincial and other museums has been hardly less important. Within a year of his appointment Sir John Marshall, recognizing the need for a closer connection between the Survey and the archæological collections in the existing museums, suggested to the Government of India the desirability of associating the Archæological Superintendents with the administration of the antiquarian sections of the chief provincial museums in their respective Circles; and the results of this connection, which still exists in some provinces, were far-reaching.

Thus from 1906 to 1927 the Peshawar Museum had as its Honorary Curator the successive Superintendents of the Frontier Circle. As a result of the efforts of Dr. D. B. Spooner, the first Hon. Curator, the Director-General of Archæology was able to record in 1912 that the Peshawar Museum was relatively superior in point of educational value to any other archæological institution. Dr. Spooner's successors devoted considerable attention to this museum, arranging and labelling its growing and unrivalled collections of Gandhāra sculptures. Similarly, the Lahore Museum benefited in no small degree from the scholarship of Dr. Vogel, to whose enthusiasm was also due the foundation of the Chamba Museum. To him also the Muttra Museum is indebted for the rescue of its collections from long-continued neglect and for the provision of funds for local excavations and the purchase of antiquities. In conjunction with Rai Bahadur Radha Krishna, its indefatigable Curator, he so enriched the museum that its Kushāna and Gupta antiquities enjoy a world reputation. Nor did Dr. Vogel's interest end here, for the Lucknow, Calcutta and Delhi museums were also the object of his care. When officiating as Director-General in 1911-12 he directed special attention to museum administration, and as Chairman of the Museums Conference gave a valuable address on the preservation of antiquities in museums as well as a paper on 'Museums as Educational Institutions.'

The lack of qualified curators for the archæological collections in the Indian museums generally has to some extent been met by the Archæological Survey Department, several of its scholars holding or having held charge of museums; the Department has also provided facilities for the museum training of selected students from the Indian States.

Provincial and other non-departmental museums have shared in the rich harvest of antiquities recovered by the Department, and in

those purchased from its special grants. Over eighty per cent. of the Peshawar collections are from excavations carried out by Sir John Marshall and his officers between 1903 and 1924; Lucknow received antiquities from the Bhita, Sankisa, Kasia and Saheth Maheth explorations; Patna from operations at Basarh and Pātaliputra; Quetta was given half of the results of the excavations at Mastung and Nal; and the Madras Museum collections were enriched by the numerous finds obtained by Mr. Rea among the prehistoric cemeteries in the Tinnevelly District and in his work at Amaravati, Danavulapadu and Perambur. Purchases made from the special grants have benefited the museums at Lahore, Lucknow, Madras, Ajmer, Peshawar, Muttra and Bijapur; and the Prince of Wales Museum, Bombay, and certain non-departmental museums have received financial assistance.

Another valuable form of co-operation with these museums has been the preparation of catalogues, guides and handbooks by archæological officers. In 1909 Dr. Vogel compiled catalogues of the Delhi Fort and Chamba Museums, and in the following year that of Muttra. Dr. Spooner in 1910 published the *Handbook of the Sculptures in the Peshawar Museum*; a revised and enlarged edition was issued in 1930 by the present writer, who also prepared an illustrated account of thirty-four Gandhāra sculptures in the Lahore Museum, under the title of 'The Buddha Story in Stone.'

The Sanchi Museum in the Bhopal State, which owes its inception directly to Sir John Marshall and contains all the antiquities recovered by him at the site, was built, furnished and arranged under his personal supervision; and the catalogue, published in 1920, was prepared by his officers.

Mention, too, must be made of the assistance rendered to provincial museums by the Archæological Chemist.

That the increase of archæological museums throughout India

since 1902, the development of their collections and the better preservation and display of their exhibits and dissemination of knowledge concerning them have been largely due to the help given to them by the Archæological Survey can hardly be disputed. But possibly the most valuable contribution to the museum movement has been the standard of efficiency presented by the Department's own museums. At the present time these are ten in number, and the Government of India expends upon them annually some Rs. 70,000. With the exception of the archæological section of the Indian Museum all have been founded since 1902.

Indian Museum, Archæological Section.—This is the oldest archæological collection in India, its basis being the antiquities of the Asiatic Society of Bengal. These, although important, were limited in range, but immediately after its foundation this section was enriched by collections from the Archæological Survey—namely, the remains of the Bharhut Stupa, sculptures from Jamalgarhi and antiquities from Bodh Gaya.

The Indian Museum's first Superintendent, Dr. J. Anderson, though a naturalist, gave much attention to the archæological exhibits, arranging them and writing a catalogue and handbook to the section—a model of perspicacity and accuracy. After his retirement in 1886 this collection suffered neglect till 1896, when Dr. T. Bloch, an archæologist, was appointed first assistant to the Superintendent. Much scientific work was carried out, but when he became Archæological Surveyor, Bengal, the section was again without a full-time officer. Under the Indian Museum Act of March, 1910, the Director-General of Archæology was made one of the Trustees, and immediately desired to appoint a whole-time Curator. Lack of funds prevented this till May, 1921, when Rai Bahadur Ramaprasad Chanda was appointed as whole-time Superintendent. A considerable re-arrangement, with improved labelling and better display of

the sculptures, resulted. The impetus then imparted continued under his successor, the late N. G. Majumdar; and to-day this unrivalled collection of Indian antiquities, illustrating the various phases of Indian culture, is presented in the most logical and attractive form to scholar and to layman. Since 1912 the collection has been enriched by purchases made from the Survey's annual grant and by the results of excavations and expeditions carried out by its officers. These include seals from Basarh; antiquities from Central Asia, obtained by Sir Aurel Stein during his first Central Asian Expedition; those found by Dr. Francke in Western Tibet; other antiquities from the excavations at Taxila, Mohenjo-Daro and Nal; the Pearse collection of engraved gems, jewels and coins; and mediæval sculptures from Bengal, Bihar and Orissa.

The exhibits are displayed in the entrance hall and in six galleries. The former contains rare specimens of Mauryan and Sunga sculpture; in the gallery to the south are exhibited part of the Bharhut railing and one of the four gateways of the stupa. Beyond this room is the Gandhāra gallery, with a large and representative collection of Gandhāra sculptures. Further south is the New Hall, devoted mainly to prehistoric relics, and here are shown the remarkable series of antiquities from the Piprahwa Stupa of the third century B.C., the large stone coffer in which they were found, and some Nepalese, Tibetan and South Indian bronzes and lithic inscriptions.

Adjoining this gallery is the Coin Room, containing one of the largest collections of Indian coins in the world, as well as gems, gold jewellery, the Emperor Shah Jahan's jewels and some copper plates.

Arranged chronologically in another gallery are sculptures from Muttra, Amaravati, Bhumara, Sarnath, Bihar and Bengal, illustrating the history of Indian sculpture from the second to the thirteenth century A.D.; a fine collection of mediæval Orissan sculpture is displayed in the adjoining corridors.

The Muslim gallery houses Arabic and Persian inscriptions, architectural pieces, glazed tiles, illuminated manuscripts and a number of pictures of some of the more notable Muhammadan monuments in eastern India.

Sculptures which cannot be exhibited are arranged in the store-rooms according to provinces, to serve as reserve collections for the use of scholars.

The Taj Museum, Agra.—This museum, founded in 1903, owes its existence to Lord Curzon, being one of the local museums established in the hope that 'local fragments which may be discovered in the neighbourhood may find their way into minor collections instead of being packed off or destroyed.' His object was to preserve everything bearing on the Taj and adjacent monuments in close proximity to their provenance. Two rooms of the Taj gateway were selected to house the collections, which include old plans of the Taj and Agra Fort; objects recovered by excavation at these sites; samples of the stones and tools used in the inlay work; pictures and rare old photographs; a fragment of the wonderful mother of pearl inlay from the Chishti Tomb at Fatehpur Sikri; lithic inscriptions, carvings and ancient documents.

Sarnath Museum.—The erection of this local museum was due to the initiative of Sir John Marshall, who conducted excavations at the site for two seasons. The building was designed by Mr. James Ransome, Consulting Architect to the Government of India, and in plan is that of an ancient Buddhist monastery, of which Sarnath has yielded many examples, the small cells being replaced here by large halls for use as exhibition galleries. Standing in a well-planned, neatly kept garden, the building of Chunar stone is worthy both of its setting and the treasures it enshrines. These antiquities, representing the different phases of Indian art for some fourteen centuries, had so increased by 1929 that rearrangement became

necessary. In carrying out this, chronological order was, as far as possible, observed, duplicates and inferior specimens being transferred to a separate gallery as a reserve collection, only the more important specimens being displayed in the public galleries. These comprise images, reliefs, architectural pieces, domestic objects and terra-cottas, and are exhibited in four halls. The Central Hall contains the Mauryan, Sunga, Andhra, Kushāna and early Gupta sculptures, including the famous Asokan Lion Capital, Mauryan portrait heads, the colossal Bodhisattva of the Mathura School with its carved stone umbrella, railings of the Sunga period, inscribed Gupta images and Mauryan pottery and terra-cottas. In the southern gallery and verandah are other Gupta antiquities, including the magnificent lintel with scenes from the *Kshāntivādin Jātaka*. The southern wing is devoted to the mediæval and late periods, the reserve collection being accommodated in the northern wing.

As Sarnath is one of the four great holy places of Buddhism, it is visited by large numbers of pilgrims from all parts of the Buddhist world and the museum attracts many foreign visitors.

Delhi Fort Museum.—This museum was designed to contain objects bearing directly on local history and especially on that of the Imperial Mughal and British periods. Founded in 1909, it is now accommodated in the building known as the Mumtaz Mahal and consists of an open verandah backed by two halls. In the outer hall are exhibited furniture and miscellaneous domestic objects, ancient arms, seals and signets, prints, engravings, photographs and maps, mutiny relics, manuscripts, printed books, carpets and articles of Mughal dress. The inner hall contains Mughal pictures, specimens of calligraphy, original documents and maps of historic interest. Sculpture and lithic inscriptions are displayed in the verandah.

In order to enable visitors to realize the interior arrangement of the Palace during the Mughal occupation, two of the apartments in

the adjacent Khwabgah (sleeping apartment) have been furnished in the Mughal manner. These period-rooms form, perhaps, the most striking exhibit in the Fort.

Archæological Museum, Nālandā.—This local museum was opened in 1917 and contains the excavated antiquities which cannot be preserved *in situ.* At present the museum has advanced but little beyond the condition of a store-room of antiquities, though there is some labelling of exhibits in the table cases. Nevertheless, it is to this collection that students of the history of art and iconography must have recourse, for its antiquities of the Late Gupta and Pāla periods are unrivalled in number and variety. These are exhibited in three rooms, the first containing stone images, terra-cottas, pottery, architectural pieces, clay sealings and inscriptions. Similar objects as well as bronze images and domestic articles of metal, miniature bronze stupas and a unique bronze quiver are displayed in the two remaining rooms. Coins, copper plates, seals and images have been sent on loan to the Indian Museum, and some two hundred metal images after treatment by the Archæological Chemist await space for exhibition.

Mohenjo-Daro Archæological Museum.—Built in 1925, this local museum consists of two galleries, each 50 feet by 15 feet, two rooms of similar size being used to store unexhibited and duplicate specimens. With the exception of a few Kushāna relics the collections are of the Chalcolithic Age, and are extensive and varied. In the first gallery are the larger examples of pottery, pictographic seals and sealings, and bronze and copper objects, small valuable antiquities being stored in the drawers of the table cases. Plans and drawings of the excavated areas and monuments hang upon the walls. The second gallery contains objects of stone, copper, bronze, faience, shell, ivory, statuary, inlays, toys, weights, jewellery, pottery and miscellaneous minor antiquities.

Harappa Archæological Museum.—Like that at Mohenjo-Daro, this local museum, built in 1927, is devoted exclusively to antiquities excavated at the site. These are all of the Indus civilization, and are exhibited in three galleries. Terra-cotta figurines, pottery, pictographic seals and sealings, and objects of shell, stone and faience are exhibited in the first room; heavy stone antiquities, terra-cottas and pottery occupy the second gallery; and in the third and largest hall are displayed thousands of terra-cotta objects such as figurines, domestic and funerary pottery, beads, weights, maceheads and numerous unidentified antiquities. As at Nalāndā, the museum has, at present, advanced little beyond the condition of a neatly arranged store-house of the excavated antiquities.

Taxila Museum.—This, a fully developed local museum, is the creation of Sir John Marshall, who was responsible for its inception, formulated the plans, watched over every step in its erection and internal arrangement, and excavated the antiquities displayed therein. The design is the work of Mr. B. M. Sullivan, Consulting Architect to the Government of the Punjab. When completed the structure will consist of a square court open to the sky with the exhibition galleries and offices on three sides and an Ionic colonnade —allowing a fine prospect of the Murree Hills—on the fourth. At present only the west side and half the wings on the north and south have been erected; but there is no appearance of incompleteness, and lawns, shrubberies and flower-beds render its setting peculiarly attractive. Outside, the battering walls of dark grey stone give the building a somewhat austere appearance, but one entirely in keeping with the landscape. The same simple dignity characterizes the interior and appropriately sets off the magnificent collections. These, recovered from the adjacent city sites and monasteries during the last twenty-five years, are exceptionally rich and varied and cover a period of more than a thousand years—from the sixth century B.C.

to the fifth century A.D. It is the only museum in India containing a representative display of the utensils, arms, implements and other objects in daily use among the people of ancient India in historic times. Exclusive of coins, the exhibits number some nine thousand, while the coins exceed that number and include many unique specimens. Gems, jewellery, coins and objects of the more precious metals are kept in a strong room open at certain hours on application.

In the open galleries Gandhāra sculpture and metal utensils, implements, arms, etc., arranged in chronological order, occupy the Central Hall; relic caskets, terra-cotta and stucco reliefs are exhibited in the South Gallery; and the North Gallery is reserved for pottery, terra-cottas and miscellaneous antiquities.

Among the many striking exhibits are the stupa, twelve feet high and complete in every detail, found in a cell in the Mohra Moradu monastery, and the long range of stucco reliefs of the fourth century A.D., formerly adorning monuments at Jaulian and Mohra Moradu and ingeniously removed from their original walls.

Lahore Fort Museum.—When, after demilitarization, Fort Lahore was transferred to the Government of India, it was made a condition that a small museum should be maintained therein for relics connected with the history of the Fort and Lahore. Accordingly the arms, accoutrements, and musical instruments, etc., of the Sikh period then in the Shish Mahal were moved in 1928 to the Bari Khwabgah to form the nucleus of the new historical museum.

The accommodation consists of a verandah and three rooms. Cannon of various types and ages lie in the verandah, while in the central and principal room are displayed weapons, musical instruments and old Sikh military uniforms, Mughal tiles and historic relics. Brass and steel breastplates and rows of bugles rest on the deep cornice which runs round the room, and above these are Sikh standards and chain armour. A smaller room contains maps, plans

and pictures connected with Sikh history, Lahore Fort or ancient monuments in the vicinity, and the third room is devoted to Sikh firearms, circular shields and engravings of historic interest.

Central Asian Antiquities Museum, New Delhi.—Open to the public since 1929, this museum contains the magnificent collections recovered by Sir Aurel Stein in his Central Asian expeditions of 1906-08 and 1913-16 as well as prehistoric pottery from Baluchistan and Mesopotamia. These are exhibited in two buildings, the Main Building on King Edward Road and the Imperial Record Office on Queensway, where four rooms and a corridor have been adapted for museum purposes.

The collections comprise wall paintings in tempera, paintings on silk, linen and paper, block prints, embroidery, textiles, woodcarvings, coins, gems, wearing apparel and innumerable objects of terracotta, stone, metal, wood, glass, leather, horn, bone, shell, coral, fibres and grass. The museum was organized by F. H. Andrews. The three galleries of the Main Building are devoted to the mural paintings from ancient Buddhist shrines and include a painted dome set up in its original form. In the Imperial Record Office the northern gallery is reserved for a series of Central Asian paintings of the seventh-tenth centuries A.D. on silk and linen, and prehistoric pottery. Miscellaneous antiquities and animals from the Astana graves are exhibited in the southern gallery, and seven large paintings on silk of the T'ang period in a small central room. For the exhibition of pottery from Sind and Baluchistan use has been made of the corridor. Nevertheless, for want of space, a great part of this valuable collection continues to be stored in trays and cupboards, and remains inaccessible to the general visitor.

Burmese Museums.—Burma is no longer part of India proper; but it should be noted that the only museums in that land are those founded by the Archæological Survey of India—namely, the Palace

Museum at Mandalay and the Pagan Museum. The former is a historical museum containing relics of the last Burmese dynasty, while the latter is devoted to antiquities recovered at the ancient capital.

From this brief account of the Indian archæological museums it is plain that, as a result of the activities of the Archæological Survey of India, they contain an almost unbroken record of Indian culture from the prehistoric age to the end of Mughal rule; and if that record be not entirely complete, the Survey still exists in all its activity to fill in the lacunæ.

H. HARGREAVES.

NOTE TO CHAPTER V

See Chapter VI on 'Publications,' pp. 239-241.

CHAPTER VI

PUBLICATIONS

From the very beginning the Archæological Survey of India has taken care to make the matter of its extensive work known to the public, and an imposing series of publications has been issued, not merely as dry official reports, but to a great extent in such a form that the educated public can understand and enjoy the contents. Short surveys, also, of this side of the department's activity will be found in *The Imperial Gazetteer of India*, Vol. II (Oxford, 1908); *The Cambridge History of India*, Vol. I, 1922, pp. 612-49, 692-6; Vol. III, 1928, pp. 568-640, 659-63; Vol. IV, 1937, pp. 523-576, 596-598; *L'Inde Antique*, par P. Masson-Oursel, H. de Wilman-Grabowska, Philippe Stern (Paris, 1933), pp. 397-458; and other works of a more general nature. *An Outline of Archæology in India* and *The Progress of Archæology in India in the past Twenty-five Years* were prepared by Rao Bahadur K. N. Dikshit, the present Director-General, in 1938 for the Indian Science Congress Association at Calcutta.

Recently the Kern Institute, Leyden, under the able direction of Professor J. Ph. Vogel, who for many years was an officer of the Archæological Survey, has started a splendid *Annual Bibliography of Indian Archæology* (Leyden, E. J. Brill, Ltd.). Here we find short papers dealing with especially important subjects, a classified list of papers and publications, often with résumés of the contents, of reviews in the various journals, and complete indexes. A series of excellent plates is added, and this annual must be consulted by anyone who wishes to get an idea of the large scope of the activity of the Indian Archæological Survey. It is mainly based on the

publications issued by the department itself, and these publications are, of course, indispensable to those who want to follow the work which has been carried on from time to time, in its full extent and in detail.

The oldest, and still very important, series was started by Alexander Cunningham, and he himself wrote a considerable part of it. Its title is *Archæological Survey of India*, and it comprises 23 volumes (Calcutta and Simla, 1871-1887), with a General Index by Vincent A. Smith (Calcutta, 1887). The various volumes are arranged according to locality, giving accounts of towns and exploration in various districts, often with discussion of the various problems raised by the finds; and by the help of the index it is easy to find one's way through the many reports.

Not much later another publication was started, *Archæological Survey of India: New Imperial Series*, of which 53 large volumes have been issued since 1874. Each volume deals with some special site or subject, and is usually well illustrated. Most of the volumes will be quoted below, under the abbreviation NIS.

At the same time James Burgess began to publish two other series: *Archæological Survey of Southern India*, 10 volumes (Madras, 1882-1903), and *Archæological Survey of Western India*, Nos. 1-12 (Bombay, 1874-1891), abbreviated as ASSI and ASWI, partly also numbered as belonging to NIS, in which case the volume will be quoted as such. Another series, of shorter accounts, was published by H. H. Cole (Calcutta, 1881-1885) under the title *Preservation of National Monuments*. Further, the Superintendents of the various archæological Circles of the Survey have been publishing annual reports since the last years of the nineteenth century.

These reports were also continued after the reconstruction of the Department by Lord Curzon in 1902, and a new series was added: *Annual Report of the Director General of Archæology in*

India, 1902 ff., published annually in Calcutta, with an *Index* to the volumes for 1902-16 by G. R. Kaye (Calcutta, 1924). Here the whole work of the department is surveyed, with well-written papers on conservation and exploration, on epigraphy, etc., and accounts of the Imperial and Provincial museums, also surveys of the activity of the archæological departments of Indian States. The reports are richly illustrated and give an excellent exposition of the imposing work carried on by the Survey from year to year. This publication will be quoted as AR.

Since 1919 a new series has been added: *Memoirs of the Archæological Survey of India* (abbreviated MASI) of which 57 parts have been published, each dealing fully with some special subject, and usually well illustrated.

Some of the Indian States have, as indicated above, their own departments, which issue separate publications:—

BARODA: *Annual Report of the Director of Archæology. The Gaekwad's Archæological Series.*

COCHIN: *Annual Report of the Archæological Department.*

GWALIOR: M. B. Garde, *Archæology in Gwalior*, 2nd edn., 1934.

HYDERABAD: *Annual Reports of the Archæological Department. The Hyderabad Archæological Series.*

KASHMIR: *Memoirs of the Archæological Survey.*

MAYURBHANJ: Nagendra Nath Vasu, *The Archæological Survey of Mayurabhanja* (Calcutta, 1911). See also AR 1922-25.

MYSORE: *Mysore Archæological Series.*

TRAVANCORE: *Administrative Report of the Archæological Department. Travancore Archæological Series.*

Several museums issue annual reports, thus—The Rajputana Museum, AJMER; the Central Museum, LAHORE; the LUCKNOW Provincial Museum; the Government Museum and Connemara

Public Library, MADRAS; the Curzon Museum of Archæology, MUTTRA; and the Watson Museum of Antiquities, RAJKOT.

In the case of the most important museums we have good catalogues and guides:—

CALCUTTA: John Anderson, *Catalogue and Hand Book of the Archæological Collections*, I-II (Calcutta, 1883). J. Coggin Brown, *Catalogue raisonné of the Prehistoric Antiquities*, ed. by Sir John Marshall (Simla, 1917). *Catalogue of the Coins*, Vol. I by Vincent A. Smith (Oxford, 1906); Vols. II-III by H. Nelson Wright (Oxford, 1907-8); Vol. IV by John Allan (Oxford, 1929).

DELHI: J. F. Blakiston, *Catalogue of the Delhi Museum of Archæology* (Calcutta, 1926). Zafar Hasan, *Specimens of Calligraphy in the Delhi Museum of Archæology*, MASI 29 (1926).

GWALIOR: M. B. Garde, *A Guide to the Archæological Museum* (Gwalior, 1928).

LAHORE: A. Cunningham, *Descriptive List of the Principal Buddhist Sculptures*. J. L. Kipling, *Descriptive List of Photographic Negatives of Buddhist Sculptures* (1889). M. A. Stein, *List of Inscriptions* (1899). R. B. Whitehead, *Catalogue of Coins*, I-II (Oxford, 1914).

LUCKNOW: Hirananda Sastri, *Some Recently Added Sculptures*, MASI 11 (1922).

MUTTRA (MATHURA): V. S. Agrawala, *Handbook to the Sculptures in the Curzon Museum of Archæology* (Allahabad, 1933). J. Ph. Vogel, *Catalogue of the Archæological Museum* (Allahabad, 1910).

PESHAWAR: H. Hargreaves, *Handbook to the Sculptures*, revised edition of D. B. Spooner's *Handbook* (Calcutta, 1930).

SANCHI: Muhammad Hamid, Ram Chandra Kak and Ramaprasad Chanda, *Catalogue of the Museum of Archæology*, with a foreword by Sir John Marshall (Calcutta, 1922).

SARNATH: Daya Ram Sahni, *Catalogue of the Museum of Archæology*, with an introduction by J. Ph. Vogel (Calcutta, 1914).

In this connection mention may be made of:—

BRITISH MUSEUM: *Catalogue of Coins. The Coins of the Sultans of Delhi*, by S. Lane-Poole (1887). *The Coins of the Muhammadan States of India*, by S. Lane-Poole (1885). *The Coins of the Greek and Scythic Kings of Bactria and India*, by P. Gardner (1886). *The Coins of the Moghul Emperors*, by S. Lane-Poole (1892). *The Coins of the Andhra Dynasty, the Western Ksatrapas, the Traikūṭaka Dynasty, and the "Bodhi" Dynasty*, by Edward James Rapson (1908). *The Coins of the Gupta Dynasty, and of Śaśānka, King of Gauḍa*, by John Allan (1914). *The Coins of Ancient India*, by John Allan (1936). Laurence Binyon and Sir William Rothenstein, *Examples of Indian Sculpture at the British Museum* (India Society, 1924).

BOSTON, U.S.A.: A. K. Coomaraswamy, *Catalogue of the Indian Collections in the Museum of Fine Arts*, 1-6 (Cambridge, Mass.).

MUSÉE GUIMET, PARIS: J. Hackin, *Guide-Catalogue, collections bouddhiques* (Paris, 1923). *La sculpture indienne et tibétaine* (Paris, 1931).

Cunningham's reports were arranged according to locality, and it will be convenient to follow this arrangement, and then to add some remarks about the Department's activity in separate branches. A general survey was given by James Burgess, *The Ancient Monuments, Temples and Sculptures of India*, illustrated in a series of reproductions of photographs: I. *The earliest monuments* (London,

1897). The famous Indian Cave Temples were dealt with by James Fergusson, *Rock-cut Temples of Western India* (London, 1864); James Fergusson and James Burgess, *The Cave Temples of India* (London, 1880), with supplements by Burgess, NIS IV-V; and Kanaiyalal H. Vakil, *Rock-cut Temples around Bombay* (Bombay, 1932). A considerable portion of the publications deals with archæological remains in individual Provinces and States, and gives a good idea of the great extent of the Department's work.

Muhammad Hamid Kuraishi gave a *List of Ancient Monuments in* BIHAR AND ORISSA, NIS LI (1931). James Burgess' work was mainly concerned with the BOMBAY PRESIDENCY, including the new province of Sind; *cf.* his accounts in ASWI, and NIS I-VI. The same part of the country was dealt with by Henry Cousens. *The Archæological Antiquities of Western India* (The India Society, 1926); *The Antiquities of Sind with Historical Outlines*, NIS XLVI. The antiquities of the CHAMBA STATE were dealt with by J. Ph. Vogel, NIS XXXVI, and Alex. Ray gave a *List of Architectural and Archæological Remains in* COORG, NIS XVII. The antiquities of the HYDERABAD STATE were reported on and listed by James Burgess, NIS III, and Henry Cousens, NIS XXXI. Ram Chandra Kak published his *Ancient Monuments of* KASHMIR for the India Society (1933), and dealt with BHIMBAR and RAJAURI in MASI 14. Accounts of remains in the MADRAS PRESIDENCY were given by Robert Sewell, NIS VI, and Alex. Rea, NIS XXV, etc. Rajendralala Mitra published two volumes upon *The Antiquities of* ORISSA (Calcutta, 1875-80), and Ramaprasad Chanda wrote upon *Exploration in* ORISSA, MASI 44. New ground was broken in Sir Aurel Stein's *An Archæological Tour in* UPPER SWAT, etc., MASI 42, and A. H. Francke's *Antiquities of Indian* TIBET, Pt. I, NIS XXXVIII, and Pt. II, NIS L; and A. Führer dealt with the UNITED PROVINCES in NIS XII, etc.

The great work carried on in connection with conservation has been dealt with in a separate chapter of this volume, and good descriptions, usually with beautiful illustrations, will be found in the various issues of AR.

Much interest has been aroused by the Department's exploration of individual ancient sites, and an alphabetical list of such places, with references to the publications dealing with them, will, perhaps better than anything else, show how great the work of the Archæological Survey of India has been.

AJANTA, see ART below.

ALMORA: exploration, AR 1921-22.

AMARĀVATĪ: James Burgess, *The Buddhist Stupas of Amaravati and Jagayyapeta*, NIS VI; AR 1905-7, 1908-9.

AVANTIPUR (Kashmir): AR 1913-14.

BAGH CAVES, see ART below.

BASARH (Vaisālī): excavations, AR 1903-4, 1913-18.

BESNAGAR: excavations, AR 1913-15.

BHARHUT: Alexander Cunningham, *The Stupa of Bharhut* (London, 1879).

BHATTIPROLU: Alexander Rea, NIS XV.

BHILSA: Alexander Cunningham, *The Bhilsa Topes* (London, 1854).

BHITA: excavations, AR 1911-12.

BODH GAYA: Rajendralala Mitra, *Buddha Gaya* (Calcutta, 1878). A. Cunningham, *Mahabodhi* (London, 1892). AR 1908-9.

BRAHMANABAD (Sind): excavations, AR 1903-4, 1908-9.

CHARSADDA: excavations, AR 1902-4.

DELHI: J. A. Page, MASI 52.

ELEPHANTA: James Burgess, *The Rock-Temples of Elephanta* (Bombay, 1871). Hirananda Sastri, *A Guide to Elephanta* (Delhi, 1934).

ELURA (Ellora): Syed Ali Bilgrami, *A Short Guide to the Cave Temples of Elura* (Madras, 1898). James Burgess, *A Guide to the Elura Cave Temples* (Reprint, Hyderabad, 1926).

HALIN (Burma): AR 1929-30.

HAMPI: A. H. Longhurst, *Hampi Ruins Described and Illustrated* (Madras, 1917).

HMAWZA (Prome): AR 1909-12, 1924-30.

JAMALGARHI: AR 1920-22.

JUNNAR: Jas. Burgess and J. F. Fleet, ASWI I.

KAPILAVASTU: A. Führer and Purna Chandra Mukerji, NIS XXVI and XXVIa.

KONARAK (Black Pagoda): AR 1902-4.

KUŚANAGARA: Vincent A. Smith, *The Remains near Kasia* (Allahabad, 1896); AR 1904-7, 1910-12.

MAHABALIPURAM, MAMALLAPURAM, see SEVEN PAGODAS.

MANDOR: AR 1905-6, 1909-10.

MARTAND: A. H. Longhurst, MASI 54; AR 1915-16.

MATHURĀ (Muttra): Vincent A. Smith, NIS XX; AR 1906-7, 1911-12.

MAUNGYA: Tungya Caves, AR 1921-22.

NADSUR CAVES: Henry Cousens, ASWI 12.

NAGARI: D. R. Bhandarkar, MASI 4.

NAGARJUNIKONDA: AR 1926-34.

NĀLANDĀ: AR 1922-35. M. H. Kuraishi, *A Short Guide to the Buddhist Remains Excavated at Nālandā* (Calcutta, 1930).

PAGAN: C. Duroiselle, MASI 56; AR 1903-4, 5-6, 7-8, 24-25, 26-30.

PAHARPUR: AR 1922-3, 1925-34.

PĀTALIPUTRA: L. A. Waddell, *Discovery of the Exact Site of Asoka's Classic Capital of Pātaliputra, the Palibothra of the Greeks* (Calcutta, 1892); AR 1912-3, 1926-7.

RĀJAGRIHA (Rajgir): AR 1905-6, 1925-6.

RAMPURVA: AR 1907-8.

SAHETH MAHETH (Srāvastī): AR 1907-8, 10-11. Bimal Churn Law, MASI 50.

SAHRI BAHLOL: AR 1906-7, 1909-10, 1911-12.

SANCHI: James Fergusson, *Tree and Serpent Worship* (London, 1868). F. C. Maisey, *Sānchi and its Remains* (London, 1892). Sir John Marshall, *A Guide to Sāñchī* (Calcutta, 1918). Ramaprasad Chanda, MASI 1; AR 1913-17. Sir John Marshall, *The Monuments of Sāñchī* (Government of India Press, 1938).

SARNATH: AR 1904-5, 6-8, 14-15, 21-22, 27-28. Daya Ram Sahni, *Guide to the Buddhist Ruins* (5th edn., Delhi, 1933). B. Majumdar, *A Guide to Sārnāth* (Delhi, 1937).

SEVEN PAGODAS (Mahabalipuram): AR 1910-11, 24-25. W. W. Carr, *Description and Historical Papers*, by William Chambers, J. Goldingham, etc. (Madras, 1869).

SHAH-JI-KI-DHERI: AR 1908-9, 1910-11.

SHWEBO: AR 1903-4.

TAKHT-I-BAHI: AR 1907-8, 10-11.

TAXILA: AR 1912-13, 14-16, 19-21, 23-25, 26-35. Sir John Marshall, *A Guide to Taxila* (2nd edn., Calcutta, 1921). MASI 7.

TRIPURI: R. D. Banerji, MASI 23.

UND: AR 1923-24.

Prehistory.—The Indian museums contain collections of prehistoric antiquities, and MASI 36 deals with the *Dolmens of the Pulney Hills*, by A. Anglade and L. V. Newton. The prehistorical researches of the Archæological Survey have in recent years come to attract unprecedented notice on account of the discovery of remains of the Indus civilization, especially at Harappa and Mohenjo-Daro, and its extension into Afghanistan and Baluchistan. The results of the excavations at Harappa and Mohenjo-Daro are registered AR 1922-35, and described in Sir John Marshall's magnificent work *Mohenjo-Daro and the Indus Civilization*, I-III (London, 1931);

cf. further N. C. Majumdar, *Explorations in Sind*, MASI 48; B. Persad, *Animal Remains from Harappa*, MASI 51; Ramaprasad Chanda, *The Indus Valley in the Vedic Period*, MASI 31, *Survival of the Prehistoric Civilization of the Indus Valley*, MASI 41; H. Hargreaves, *Excavations in Baluchistan*, 1925, MASI 35; T. A. Holdich, *Notes on Antiquities, Ethnography and History of Las Belas and Makran* (Calcutta, 1894); Sir Aurel Stein, *An Archæological Tour in Waziristan and Northern Baluchistan*, MASI 37, and *An Archæological Tour in Gedrosia*, MASI 43. See also Sir Aurel Stein's *Early Relations between India and Iran* (*Asiatic Review*, January, 1938, p. 38).

Art.—The researches of the Archæological Survey are the chief source from which our knowledge of Indian art has been derived. The general treatises on this subject are mostly due to scholars who have not been working as officers of the Survey, though A. Foucher (*L'art gréco-bouddhique du Gandhāra*, Paris, 1905-22; *The Beginnings of Buddhist Art*, London, 1917) and V. A. Smith (*A History of Fine Arts in India and Ceylon*, Oxford, 1911, 2nd edn. by K. de B. Codrington, Oxford, 1930) have been temporarily connected with it, and J. Ph. Vogel (*Indian Serpent Lore*, London, 1926) was, for a long period, a prominent member of its staff. The Survey itself is, however, responsible for a series of important studies: R. D. Banerji, *Eastern School of Mediæval Sculpture*, NIS XLVII; B. B. Bidyabinod, *Varieties of the Vishnu Image*, MASI 2; Ramaprasad Chanda, *The Beginning of Art in Eastern India*, MASI 30; A. Foucher, *On the Iconography of the Buddha's Nativity*, MASI 46; E. H. Hankin, *The Drawing of Geometric Patterns in Saracenic Art*, MASI 15; T. A. Gopinatha Rao, *Talamana or Iconometry. Being a concise account of the measurements of Hindu images as given in the Agamas and other authoritative works with illustrative drawings*, MASI 3.

Much of the work connected with the study of Indian art bears reference to individual sites:—

AJANTA: M. C. Dey, *My Pilgrimage to Ajanta and Bagh* (London, 1925). V. Goloubew, *Documents pour servir à l'étude d'Ajanta. Les peintures de la première grotte* (Ars Asiatica X, Paris, 1927). John Griffiths, *The Paintings in the Buddhist Cave-Temples at Ajanta*, I-II (London, 1896-7). Lady Herringham, *Ajanta Frescoes* (India Society, 1915). Kanaiyalal H. Vakil, *At Ajanta* (Bombay, 1929). G. Yazdani, *The Colour and Monochrome Reproductions of the Ajanta Frescoes* (Oxford, 1930-33). *A Guide to Ajanta Frescoes* (Hyderabad, 1934). A. Foucher, *Preliminary Report on the Interpretation of the Paintings and Sculptures of Ajanta* (Jour. Hyderabad Archæ. Soc., 1919-20).

BADAMI: R. D. Banerji, *Bas Reliefs of Badami*, MASI 25.

BAGH: Sir John Marshall, M. B. Garde, J. Ph. Vogel, etc., *The Bagh Caves in the Gwalior State* (India Society, 1927).

BHARHUT: AR 1906-7, 8-9.

BHARWAIN: Kangra paintings, AR 1923-4.

BODH GAYA: Ananda K. Coomaraswamy, *La sculpture de Bodhgaya* (Ars Asiatica XVIIII, Paris, 1935).

LORIYAN TANGAI: Sculptures, AR 1903-4.

MAHOBA: K. N. Dikshit, *Six Sculptures from Mahoba*, MASI 8.

MANDALAY: Chas. Duroiselle, *Pageant of King Mindon leaving his Palace on a visit to the Kyauktawgyi Buddha Image at Mandalay* (1865); reproduced from a contemporary and rare document, MASI 27.

MATHURA (Muttra): J. Ph. Vogel, *La sculpture de Mathura* (Ars Asiatica XV, Paris, 1930).

NĀLANDĀ: A. J. Bernet Kempers, *The Bronzes of Nalanda and Hindu-Javanese Art* (Leiden, 1933).

PAGAN: *Ananda temple sculptures*, AR 1912-4.

SEVEN PAGODAS: H. Krishna Sastri, *Two Statues of Pallava Kings and Five Pallava Inscriptions in a Rock Temple at Mahābalipuram*, MASI 26.

SIND: H. Cousens, *Portfolio of Illustrations of Sind Tiles* (London, 1908).

Architecture.—The first complete treatise of Indian architecture, J. Fergusson and J. Burgess, *A History of Indian and Eastern Architecture*, I-II (2nd edn., London, 1910), is closely connected with the work of the Archæological Survey, and so is also E. W. Smith, *Portfolio of Indian Architectural Drawings*, I (London, 1897). Some important publications deal with the different more or less local styles:—

CHĀLUKYA: Alexander Rea, *Chālukyan Architecture*, NIS XXI. Henry Cousens, *The Chālukyan Architecture of the Kanarese Districts*, NIS XLII.

DRAVIDIAN: G. Jouveau-Dubreuil, *Dravidian Architecture*, ed. by S. Krishnaswami Aiyangar (Madras, 1917).

PALLAVA: A. H. Longhurst, *Pallava Architecture*, I-III, MASI 17, 33, 40. Alexander Rea, *Pallava Architecture*, NIS XXXIV.

There are further many papers and books dealing with individual sites or temples:—

AGRA: Edmund Smith, *Moghul Colour Decoration of Agra*, I, NIS XXX.

AHMADABAD: James Burgess, *The Muhammadan Architecture of Ahmadabad*, I-II, NIS XXIV, XXXIII.

AIHOLE: AR 1907-8.

BADAUN: J. F. Blakiston, *The Jami Masjid at Badaun and other Buildings in the United Provinces*, MASI 19.

BHUBANESVAR: AR 1902-3; M. H. Arnott, *Report with Photographs of the Principal Temples at Bhubanesvar and Caves in the Khandagiri and Udaigiri Hills, Orissa* (London, 1903).

BHUMARA (Nagod): R. D. Banerji, *The Temple of Śiva*, MASI 16.

BIJAPUR: *Architecture at Beejapur,* with an historical and descriptive memoir by Meadows Taylor, and architectural notes by James Fergusson (London, 1866). Henry Cousens, *Bijapur and its Architectural Remains*, NIS XXXVII. *Bijapur; a Guide to its Ruins with Historical Outline* (2nd edn., Poona, 1907); *cf.* also AR 1902-3.

DEKHAN: Henry Cousens, *Mediæval Temples of the Dekhan,* NIS XLVIII.

FATEHPUR-SIKRI: Edmund W. Smith, *The Moghul Architecture of Fathpur-Sikri,* NIS XVIII.

GUJARAT: Jas. Burgess, *The Muhammadan Architecture of Bharoch, Cambay, Dholka, Champanir, and Mahmudabad in Gujarat,* NIS XXIII. Jas. Burgess and Henry Cousens, *The Architectural Antiquities of Northern Gujarat,* NIS XXXII.

JAIPUR: S. S. Jacob, *Jeypore Portfolio of Architectural Details* (London, 1890-98).

JAUNPUR: A. Führer, *The Sharqi Architecture of Jaunpur,* with drawings and architectural descriptions by Edmund W. Smith, ed. by James Burgess, NIS XI.

KATHIAWAR: Henry Cousens, *Somanatha and other Mediæval Temples in Kāthiāvād,* NIS XLV.

NIZAM-UD-DIN: Zafar Hasan, *A Guide to Nizamu-d Dīn,* MASI 10.

PALAMPET: Ghulam Yazdani, *The Temples of Palampet,* MASI 6.

QUTB: J. A. Page, *Guide to the Qutb, Delhi* (Calcutta, 1927); *An Historical Memoir on the Qutb, Delhi,* MASI 22.

SIKANDRA (Secundra): Edmund W. Smith, *Akbar's Tomb Sikandarah, near Agra,* NIS XXXV.

SPITI: H. Lee Shuttleworth, *Sha-luṅ Temple, Spyti-ti,* with a preface by A. H. Francke, MASI 39.

Inscriptions.—The numerous inscriptions found all over India are one of our chief sources of reconstructing the history of past times, and the Archæological Survey, which very early began to collect and utilize these records, has issued an imposing series of epigraphical publications. The earliest ones were mostly concerned with Western and Southern India and have mostly been superseded by new ones. Jas. Burgess and Bhagwanlal Indraji's *Inscriptions of the Cave Temples of Western India* (ASWI 10) is, however, still the only edition of some important epigraphs; *inter alia* a record in an unidentified language.

At an early date was conceived the plan of publishing a *Corpus Inscriptionum Indicarum,* with volumes comprising definite groups. The first volume, the *Inscriptions of Asoka,* was originally published by Cunningham (Calcutta, 1874), but a later excellent edition (Clarendon Press, 1925) is due to E. Hultzsch. Of the second volume, the first part, *Kharoshthī Inscriptions,* with the exception of those of Asoka, was edited by Sten Konow (Calcutta, 1929). The second part, *Brāhmī Inscriptions,* to be published by Heinrich Lüders, is under preparation. Vol. III, *Inscriptions of the Early Gupta Kings and their Successors,* by John Faithfull Fleet, appeared at Calcutta in 1888. A new edition, by Professor D. R. Bhandarkar, is under preparation.

Another series, the *Epigraphia Indica,* a collection of inscriptions supplementary to the *Corpus Inscriptionum Indicarum,* began to appear in Calcutta, 1892. The two first volumes were issued in the NIS XIII and XIV, but Vols. III ff. were published as a supplement to the *Indian Antiquary,* which itself brought out numerous editions of Indian inscriptions, up to Vol. XV, and since as a separate Govern-

ment publication. The editor of *Epigraphia Indica* has usually been the Government Epigraphist, but from 1917 onwards several volumes (part of Vols. XIII and Vols. XIV-XVI) were edited by Dr. F. W. Thomas. This publication has also brought out extremely useful lists:—H. Lüders, *A List of Brāhmī Inscriptions from the Earliest Times to about* A.D. 400 *with the exception of those of Aśoka*, Ep. Ind. X, Appendix. D. R. Bhandarkar, *A List of the Inscriptions of Northern India in Brāhmī and its Derivative Scripts, from about* A.D. 200, Ep. Ind. XIXf., Appendix. F. Kielhorn, *A List of the Inscriptions of Northern India from about* A.D. 400, Ep. Ind. V and VIII, Appendix. *A List of Inscriptions of Southern India from about* A.D. 500, Ep. Ind. VII and VIII, Appendix. The *Epigraphia Indo-Moslemica*, Calcutta, instituted from 1907, forms a supplement to this publication.

Other series are limited to definite areas. Above all is *South Indian Inscriptions*, Vols. I-VIII (Madras, 1890 ff.), included in NIS. It was first edited by E. Hultzsch, and has been continued by his successors in the Ootacamund office, whose annual reports, since 1886, are full of information about South Indian epigraphs. Another South Indian Series is B. L. Rice's *Epigraphia Carnātica*, I-XII (Bangalore, 1886-1904), with a thirteenth volume, General Index by H. M. Krishna (Bangalore, 1934). Finally, there is a Burmese series, *Epigraphia Birmanica, being lithic and other inscriptions of Burma*, I-IV Rangoon, 1919-36). Some more special publications have also been issued by the departments, the most recent ones being Muhammad Ashraf Hussain, *A Record of all the Quranic and Non-Historical Epigraphs on the Protected Monuments in the Delhi Province*, MASI 47, and M. Nazim, *Bijapore Inscriptions*, MASI 49.

Central Asia.—The ancient expansion of Indian civilization into Central Asia was at an early date noticed in India, and important finds were brought to the country and arranged by A. F. Rudolf

Hoernle, who issued some important publications:—*The Bower Manuscript;* facsimile leaves, Nagari transcript, Romanized transliteration and English translation, NIS XXII. *A Report on the British Collection of Antiquities from Central Asia,* JASB 68 and 70, P. i, extra number. *Facsimile Reproduction of Weber MSS,* Part IX, and *Macartney MSS,* Set I, with Roman transliteration and indexes; reprinted from the JASB, Vol. 70, P. i, extra No. 1, 1901 (Calcutta, 1902). *Manuscript Remains of Buddhist Literature found in Eastern Turkestan;* facsimiles with transcripts, etc. Vol. I (Oxford, 1916).

The last-mentioned work was mainly based on the finds of Sir Aurel Stein, a prominent member of the Indian Archæological Survey, who has taken a leading part in the remarkable phase of Central Asian research work which we have witnessed in the twentieth century (*see* Chap. III[*d*]). The results of his expeditions to Central Asia have been published in three splendid works: *Ancient Khotan,* I-II (Oxford, 1907); *Serindia,* I-V (Oxford, 1921); *Innermost Asia,* I-IV (Oxford, 1928), and more popular and personal narratives, conveniently summarized in *On Ancient Central Asian Tracts; brief narrative of three expeditions in Innermost Asia and North-Western China* (London, 1933). The grand results achieved by this scholar led to the foundation of the Central Asian Antiquities Museum, New Delhi, which has published the following works by Fred. H. Andrews: *Catalogue of the Wall-Paintings from Ancient Shrines in Central Asia and Sistan recovered by Sir Aurel Stein* (Delhi, 1933), and *Descriptive Catalogue of Antiquities recovered by Sir Aurel Stein during his explorations in Central Asia, Kansu and Eastern Iran* (Delhi, 1935).

General.—A. A. Macdonell, *India's Past* (Oxford, 1927); K. de B. Codrington, *Indian Art and Archæology* in G. T. Garratt's *Legacy of India* (Oxford, 1937); and H. G. Rawlinson, *India* (Cresset Press, 1937).

Sten Konow.

[For Illustrations to this Chapter, see Plates XXII to XXXIII.]

CHAPTER VII

INDIAN STATES

(*a*) HYDERABAD

THE Archæological Department of the State of Hyderabad was inaugurated in 1914, only three years after the accession of His Exalted Highness Nawab Sir Mir Osman Ali Khan, G.C.S.I., G.B.E.

The State Government had always shown a deep interest in the exploration and conservation of the archæological remains of the Dominions, though, owing to the absence of a properly constituted department, attempts in this direction were spasmodic and irregular. During the ministry of the Nawab Salar Jung I enormous sums were spent to preserve the monuments of the State, but after the death of that illustrious statesman official interest in this matter slackened, and the monuments again fell into disrepair and ruin. The Public Works Department occasionally on their own initiative or at the suggestion of the Archæological Surveyor, Bombay Presidency, in whose jurisdiction the monuments of the State were nominally placed, came to the rescue, but conservation means more than ordinary repairs, and, besides, requires some artistic and scientific technique. The result was that, although the State Government incurred considerable expenditure on the preservation of monuments, antiquaries and art-critics deplored their condition and often made appeals for their better upkeep. Thereupon the State authorities entered into correspondence with the Director-General of Archæology in India, and with his advice and co-operation constituted an Archæological Department in the Dominions and appointed the present writer as its first Director.

The duties of the Director were thus defined: (1) to preserve authentic specimens of monumental antiquities of the Nizam's Dominions; (2) to excavate such sites and areas as are likely to throw light on the past history of the country; and (3) to arrange for the systematic collection and location of movable antiquities such as sculptures, inscriptions, manuscripts, paintings, coins, arms, fabrics, ceramics, metal work and wood and ivory carvings.

In pursuance of these duties the Department since its inauguration has not only preserved all the principal monuments of the Dominions, but made excavations at several prehistoric and protohistoric sites and established a museum in Hyderabad for the exhibition of genuine specimens of the local arts and crafts. A vast literature in the form of monographs, guide-books, and illustrated articles has also been compiled, in which the requirements of the serious student and the ordinary reader have been fully considered.

As several of the monuments have an important bearing on the art and culture of the East and even of the West, the utmost care has been observed and every scientific method has been employed by the Department to preserve such relics of India's past glory. Take, for example, the conservation of the frescoes of Ajanta, which by the passage of time and the inclemencies of weather had decayed to such an extent that the painted surface was falling off in flakes and perished at the gentlest touch. Further, in the few places where the frescoes were intact they were smeared by some injudicious artists in comparatively recent times with a thick coat of copal varnish in order to brighten their detail and also to preserve them from moisture. The result, however, was the opposite of what was intended; for the varnish, during the course of a quarter of a century, not only made the fine brushwork more indistinct, but in some cases where the dirt had not been removed beforehand from

the fresco, converted the entire painting into a dingy patch. Thanks, however, to the liberal policy of Government and the enlightened patronage of His Exalted Highness, all schemes which were submitted by the Department in this connection were readily sanctioned; and within the course of a decade or so, the repairs to the caves and the cleaning and conservation of the frescoes have been carried out on such sound principles and in such a scientific manner that these matchless monuments have found a fresh lease of life for at least a couple of centuries.

To give an idea of the expenditure incurred and the solicitude shown, mention may be made of the appointment with liberal remuneration of two Italian experts, Professor Cecconi and Count Orsini, for the preservation of Ajanta frescoes for two seasons—1920-21 and 1921-22. But this expenditure was, however, very small in comparison with the vast sums spent on the building of roads and bridges in order to make Ajanta easily accessible to the ordinary student. The distance from Aurangabad to Ajanta is sixty miles, but there existed a road only for the first thirty miles, and the remaining distance had a cart-track, which was often lost amid boulders and deep ravines, while the last five miles, containing the Fardapur Ghat, had a descent of nearly five hundred feet through precipitous rocks and jutting stones. All these obstacles have now been removed, and a road which can be used by motors has been built right to the foot of the hill wherein the cave-temples are hewn. The Fardapur Ghat is now a most pleasant drive, offering lovely views of the Ajanta valley and the Khandesh plains.

Another measure carried out for the convenience of visitors to Ajanta is the building of a large and comfortable rest-house. The concern and anxiety for the conservation and study of the Ajanta frescoes has been so great that along with the measures enumerated above a systematic scheme has been carried out to reproduce the

frescoes by photographic process, in order to keep for posterity an authentic record of this priceless heritage of Indian art. The scheme has been eminently successful; and the two volumes (Oxford, 1930-33), containing the photographic copies of the frescoes of Caves I-II with an authoritative study of them from the artistic and iconographic points of view, have been welcomed by scholars and connoisseurs all over the world. Suffice it to quote here from two reviews, one from the point of view of oriental scholarship, the other as an authority on fine art.

The *Indian Antiquary* for August, 1931, reviewed the volumes in the following words:

> 'Three previous attempts have been made to copy the frescoes of Ajanta since they were discovered early in the nineteenth century. Major Gill worked there for some twenty years; but the results of his labour were destroyed in the fire at the Crystal Palace Exhibition in 1866. Again, in 1872, Mr. Griffiths, Principal of the Bombay School of Art, commenced to make copies, with the assistance of his pupils, and worked for many years. Unfortunately a great deal of his work was also burnt, but he published his well-known work, *The Paintings in the Buddhist Caves at Ajanta,* in 1896 from the copies saved. Next Lady Herringham, with a band of Indian artists, took up the task during the years 1909 to 1911, and in 1915 published a portfolio of plates, mostly coloured, which gave the public a clearer idea of the wonders of the frescoes. Though most useful for comparison, and perhaps preserving some details that have since been lost, these necessarily lack the accuracy ensured by photographic reproduction possessed by the present splendid series of plates. To preserve what remains of these frescoes for future generations, His Exalted Highness the Nizam authorized his Archæological Department to have a complete photographic record prepared. The world of art is deeply indebted to the munificence of His Exalted Highness and the active encouragement of his able Finance Minister, Sir Akbar Hydari.'

In the *Burlington Magazine* for May, 1931, there is an appreciative reference to

'an almost complete set of reproductions as close to the originals as modern science and skill could make them, of what is perhaps the greatest artistic wonder of Asia.'

Besides the cave-temples of Ajanta, the Nizam's Dominions possess more monuments of the Buddhist faith, among which the *chaityas* (cave temples) and *vihāras* (monastic cells) of Elura (Ellora), Pitalkhora, Ghatotkach and Aurangabad are pre-eminent either for their antiquity or for the style of their architecture and beauty of sculpture. The cave-temples of Pitalkhora and Ghatotkach were in a sad state of neglect, being covered with rank vegetation and filled up with silt which had accumulated through rainwater. The columns and friezes had decayed to such an extent that there was a danger of the rock-roof falling down. These relics have now been thoroughly cleaned, and neat props have been built for their safety. The Buddhist monuments of Elura and Aurangabad have also received a large share of attention; not only have they been cleared of débris and repaired, but footpaths have been laid out and steps constructed so that access to them may be easy.

What has been done for Buddhist monuments has been done in an equal measure and with strict impartiality for the relics of other faiths, whether they be Hindu and Jain shrines or Muslim mosques, tombs and palaces. To begin with the Hindu monuments, mention must be made first of the great rock-hewn temple of Kailāsa, the porch of which was crumbling to decay and has been rescued by the insertion of a steel frame outwardly covered by cement plaster of a neutral tint to match the rock surface. The other Brahmanical temples Ravan-ki-kai, Dumar Lena, Ramesvara and Das Avatara, all of which are at Elura, have been thoroughly repaired, and modern accretions, which disfigured the interiors of these magnificent monuments, have been removed.

Among the mediæval temples of this faith, much attention has

been devoted to conserve and save from further ruin the Mahadeva temple at Ittagi in the Raichur district, the Vishnuite shrine of Dichpalli in the Nizamabad district, the Panchesvara temple at Pangal in the Nalgonda district, the thousand-pillar temple of Hanamkonda and the great temple of Palampet. The last edifice was in a dangerous condition, but by judicious measures its roof and the beautiful figure-brackets, which are the finest specimens of the twelfth-century Hindu sculpture, have been saved from impending decay.

In the groups of Islamic monuments, Mubarak Khalji's Mosque in the Daulatabad fort, the Jami Masjid of Gulbarga, the Bahmani Mosque in the fort at Bidar, the Kali Masjid in the same city, and the Mushirabad Mosque and the Toli Masjid in the Hyderabad city, have been thoroughly repaired and their original appearance restored by various measures. Several of these edifices rank high in the list of the Muslim monuments of India—for instance, the Great Mosque of Gulbarga and the Bahmani Mosque of Bidar fort, the architecture of both being characterized by a beauty of line in the arrangement of the component parts, which are, however, of the simplest design. Among the edifices of a semi-religious character, mention should be made of the Madrasah of Mahmud Gawan of Bidar and the Badshahi Ashur Khana of Hyderabad. These two buildings were apparently designed by Persian architects, for the Madrasah of Bidar has a strong resemblance to the Madrasah of Isfahan in Persia, while the tile-work and the hall of the Badshahi Ashur Khana are copied either from the Shiite shrine of Meshed in Iran or from the buildings dedicated to the same faith in Iraq. The exquisite tile-work of the latter monument has been thoroughly preserved and its roof has been reconstructed, for the timber of the original structure had completely decayed. At the Madrasah of Mahmud Gawan extensive measures have been carried out to repair

the building in such a manner as to restore it to some semblance of its first beauty.

Other monuments of the Muslim faith which have been tended with care are the Bahmani tombs of Gulbarga and Bidar, the Baridi mausolea of the latter place, the Adil Shahi tombs of Gogi in the Gulbarga district and the Qutb Shahi tombs of Golconda. In repairing these monuments the Department has not only made them structurally sound, but has improved their surroundings by laying out courts and removing all modern excrescences.

Again, perhaps in no part of India is there a greater abundance and variety of forts than in the Nizam's Dominions. The reasons are not far to seek, for the plateau of the Deccan has been on the one hand from very early times the meeting-place of different conquest-loving peoples, while, on the other, its special geological formation, consisting of steep rocks standing out in an otherwise fairly level country, offered special facilities to the inhabitants to use the rocks as places of refuge. The traces of large prehistoric settlements at the foot of Maula Ali and Bhongir hills clearly show that the early denizens of the plateau specially selected these sites so that they might climb up the hills in time of danger. It is not at all improbable that at one time the famous scarp of the Daulatabad fort, which in later times must have been chiselled artificially, together with the Golconda rock, was resorted to by the inhabitants for similar purposes. The way in which the people of hilly tracts availed themselves of these natural advantages would have led the dwellers of the plains to use artificial means for piling up similar defences. The mud walls of the Warangal fort and the unshapely watch towers of our modern villages are reminiscent of the early military architecture of the plains of the Deccan. With the advance of knowledge, masonry seems to have been introduced in building defence-walls, first in crude forms, but later quite regularly, although

the size of the stones, as in the cyclopean walls, remained a significant feature of the military architecture of the Deccan until the advent of the Muslims. On the walls of the Raichur fort is an interesting carving in which a heavy stone is shown laden on a large four-wheeled cart, tilted up, so that the rear end of the stone nearly touches the ground. Buffaloes are yoked to the cart in pairs; as they grow smaller in front and more indistinct it is difficult to count them. Probably this is meant for perspective. Upon the forward upturned end of the stone is perched the driver, whip in hand, while others are applying long levers to the wheels and stone to help it along. The length of the stone to which the carving refers is 41½ feet, and it is still in the walls of the Raichur fort, near the western gate. Apart from the large size of the masonry, the other distinguishing features of the Hindu military constructions are the irregular form of the stones and the entire absence of the use of cement of any kind. The joints of the stones were first perfectly chiselled, and then they were laid one above the other, being kept together only by their enormous weight (Plate XXIV).

With the advent of the Muslims into the Deccan, a vigorous style of military architecture grew up, and the use of the guns under Turkish officers and engineers in the latter half of the fifteenth century brought about still further improvements in the principles and material of building as well as in the laying out of the defences. The present fortifications of the majority of the Deccan forts bear a striking resemblance in their arrangement to the mediæval European forts, the influence of the Turkish engineers being apparently the cause of this similarity.

A large number of these forts has been systematically studied and described in detail in the *Annual Reports* of the Department. The survey plans of the Golconda, Gulbarga and Bidar forts are also available for sale at nominal prices for the benefit of students.

As the Bidar fort was for a long time the residence of the Bahmani kings, they had erected beautiful edifices there for their personal comfort on the one hand, and the display of power and glory on the other. But by the change of dynasties and the consequent havoc as also by the upheavals caused by various sieges, these noble monuments almost completely perished, leaving huge heaps of débris and traces of ruined walls and towers. As Bidar has now been connected with Hyderabad by railway, and the chances of the antiquary and historian visiting the place are favourable, the Department has carried out excavations there on a large scale, to expose to view and preserve the old palaces and public buildings. A large volume describing the monuments of Bidar has been prepared for publication in 1939 by the Oxford University Press.

Since its inauguration, the Department has discovered several hundred inscriptions; three of these, being the Asokan edicts, are in Brāhmī, and the rest in Sanskrit, Kanarese, Telugu, Marathi, Arabic and Persian. These records have been carefully edited and published in the form of either *Memoirs* of the Department, or articles contributed to the *Epigraphia Indo-Moslemica*, a journal published under the authority of the Government of India (*see* Chapter IV [*b*]). Of the *Memoirs* of the Department, thirteen have already appeared. Several of these have been included in the University courses at Madras, Calcutta, and elsewhere. It is also interesting to note that the 'marks' found by the Director on prehistoric pottery some nineteen years ago have been considered by some scholars to be the origin of the early alphabet of India. Similar marks have recently been found at Mohenjo-Daro, but the Director as early as 1917 had shown their similarity to some of the Brāhmī letters and also to the old Cretan, Mycenæan, Etruscan and Libyan characters.

A museum in Hyderabad was opened by His Exalted Highness in 1931, when the hope was expressed that in time it would be

reckoned 'as one of the renowned and historic institutions of Hyderabad.' The hope has been amply realized, for the Hyderabad Museum has acquired collections in its sections of sculpture, painting, old arms, ceramics, coins and bidri-ware, which compare favourably with those of the senior institutions of India. The Hyderabad collection of celadon-ware is perhaps unique in the country, for it is based on the extensive collection of this ware which was originally deposited at the Bibi-ka-Maqbara by Prince Azam Shah for use during the *Urs* (anniversary) of Princess Dilras Bano Begum, over whose remains the mausoleum had been built. The cabinet of coins had also a vast store of the Deccan issues, several of which are extremely rare, as their mints have been identified for the first time by research carried out by the Department. The collections of the Museum have been enriched by suitable gifts from time to time, and it will be appropriate to mention in this connection that among the gold coins there was one of Mu'azzamabad, a mint of which the gold issues are extremely rare.

G. YAZDANI.

(*b*) MYSORE

The Mysore State extends over 29,000 square miles in the southern and highest part of the Deccan table-land, and enjoys a temperate and invigorating climate, which is combined with natural fertility and a good water-supply. These blessings have enabled its inhabitants to play an important part in the political and cultural history of the Deccan during more than 2,000 years. The area is thus full of ancient sites, monuments and other antiquities which offer a prolific field for the work of the archæologist.

Mr. B. L. Rice, an educational officer of the State, who had

nearly 4,000 new records. He edited a selection of these in the *Annual Reports* of the Department. A large number of the records he copied with the intention of publishing them in a series of volumes supplementary to the *Epigraphia Carnātica*; but he was able to publish only the revised and enlarged edition of Volume II—the Inscriptions of Sravanabelgula. Mr. Narasimhachar's epigraphical work is marked by thoroughness; and among his discoveries may be mentioned the Kudlur plates of Mārasimha, an important record and one of the longest known to Indian epigraphy.

Very early in his career, Sir John Marshall, the Director-General of Archæology in India, suggested to Mr. Narasimhachar two new lines of work—namely, architecture and excavation. Mr. Narasimhachar made brief studies of the architectural monuments visited by him in the course of his tours and published his notes in the *Annual Reports* of the Department. More detailed studies were made of three temples, on each of which illustrated monographs were published—namely, the Kesava temple at Somanathpur, the Kesava temple at Belur, the Mahālakshmi temple at Doddagaddavalli. He was also responsible for drawing up a list of more than 150 ancient monuments and for moving the Mysore Government to make a more organized attempt for their conservation by following the example of the Government of India.

In 1922, when Mr. Narasimhachar retired on pension, drastic retrenchment was made in the Archæological Department owing to the financial difficulties following the Great War. Since then the University of Mysore supervised the Department; and in the same year Dr. Shama Sastri, Curator of the Oriental Library, was appointed part-time Director of the Archæological Department. He was a scholar who had specialized in Sanskrit; two of his interesting contributions published in the *Annual Reports* of the Department were his discussion of the Gupta era and his Kannada rendering of

the non-Greek passages in a farce of the second century A.D., found in the Oxyrhynchus papyrus of Egypt.

The responsibility for collecting manuscripts and editing literary works was gradually transferred to the Oriental Library. Through this institution and its able Curators like the late Mr. A. Mahadeva Sastri and Dr. Shama Sastri, the Government of Mysore have published more than 100 highly important works. The Kannada series, which has reached twenty-three volumes, has continued the work started by the Archæological Department in the *Bibliotheca Carnātica* series. The Oriental Library now contains over 10,000 manuscripts in addition to a large number of printed books bearing on oriental subjects. It is one of the premier institutions for oriental research in India. During Dr. Shama Sastri's régime of six years in the Archæological office, nearly a thousand new inscriptions were collected, and these were read and published in the respective *Annual Reports*. Among the discoveries of this period may be mentioned the Chukkattur plates of the Gangas and the Gaddemane inscription of Sīlāditya.

Following the proposals made by Mr. R. Narasimhachar with regard to the conservation of monuments in the State, the Ancient Monuments Preservation Regulation was passed in the year 1924. The conservation of the famous temple of Kesava at Somanathpur was started during this period. Among the notices of the architectural monuments published were those relating to the Vīranārāyana temple of Belavadi and the twin temples of Mosale. In 1924, in expectation of Dr. Shama Sastri's retirement, the Government of Mysore selected the present writer, who was a Lecturer in History at the University, and deputed him for a thorough all-round training at the University of London, the British Museum and the excavation fields in Egypt under famous scholars like Sir W. Flinders Petrie and Professor Ernest Gardner. From 1929 he has been work-

ing as part-time Director of Archæology in addition to his regular duties as full-time Professor of History at the University of Mysore. In addition to the continuation of the epigraphical re-survey of the State, and the study of manuscripts bearing on history and antiquities, he started a detailed architectural survey of the State, an examination of all available numismatic data, a study of ancient sites and the scientific excavation of some selected areas.

In the field of epigraphy, an index was published for the *Annual Reports* of the Department from 1906 to 1922; and for the great series of the *Epigraphia Carnātica* a comprehensive index (Vol. XIII) was completed and its first part published. The publication of more than 4,000 inscriptions collected by Mr. R. Narasimhachar was undertaken, and arrangements have been made for issuing them in Vols. XIV, XV, and XVI of the *Epigraphia Carnātica.* As a result of the re-survey conducted during the last eight years, more than 600 new inscriptions have been collected, some of which are of considerable importance. The oldest of these and perhaps the most important is a rock inscription in Brāhmī characters and Prakrit language of Mayūrasarman, the founder of the Kadamba Empire. The record throws very valuable light on the political geography of Southern India in the third century A.D., which had until recently been considered a dark period in Indian history. Among the Kannada records studied during the last few years may be mentioned the Halmidi stone inscription of about the middle of the fifth century A.D., which is the earliest authentic record in the Kannada language now existing, and the Devarahalli stone inscription giving a genealogical list of the Ganga dynasty. A number of copper-plates throwing much new light on the history of the Gangas and others have also been studied, one recent find being the Basavanpura grant, giving a genealogy of the ancient Punnād kings, of whom very little is known. The inscriptions collected and studied during each year

have been published in the *Annual Report* with illustrations of the more important ones.

The immortal work of the Hoysalas has given the Mysore State architectural and sculptural wealth deserving of international recognition. During the last nine years a detailed survey of more than a hundred of the important architectural monuments of the State like those of Belur, Halebid, Somanathpur, Belgami, Nandi, etc., has been conducted, and a large manuscript work containing full descriptions of these monuments has been prepared. An introduction tracing the evolution of Deccan architecture during the last 1,500 years is in the course of preparation. It is proposed to publish these in a set of volumes along with copious selections from the drawings and photographs collected by the Department. Meanwhile, a series of guide books is being issued for the use of visitors. Though archæologists have been busily working in this small area for nearly fifty years, scarcely a year passes without some new and interesting discovery. Of the monuments studied very recently, two deserve special mention. The Arkesvara temple at Hale-Alur has numerous relievo sculptures of about the Chola period. The Rāmesvara temple at Narasamangala is a unique monument built more than a thousand years ago.

Since the year 1922, the Archæological Department has applied its attention to the collection, study and review of manuscripts having historical or cultural importance. Almost every year a note is published in the *Annual Reports* of this Department on the manuscripts studied during each year. Among some interesting manuscripts studied during recent years have been the 'Memoirs of Hyder Ally from the year 1758 to 1770,' by Peripoto, a Portuguese in Hyder's service. Further, during the last eight years the Bangalore Museum collection of coins and other available collections have been studied, classified and catalogued. In the coins section of the

Annual Report of the Department detailed studies of the Deccan coins of the various epochs have been published, ranging from the Pūrana types to the issues of the Mysore State in the 19th century.

In 1928 and the following years some amount of excavation was conducted by the Department, particularly at Chandravalli, near Chitaldrug, where a buried Sātavāhana town of two thousand years ago was discovered. Further excavation was stopped owing to financial difficulties. Nearly five thousand objects, which were collected at Chandravalli, have now been catalogued, and are expected to be published in a special excavation monograph. At Brahmagiri, in the northernmost part of Mysore, below ruined towns of later ages, have been found traces of a microlithic settlement, which may be about six thousand years old. In the absence of funds for undertaking regular excavation, over-ground survey has been conducted upon nearly a score of ancient sites ranging in antiquity from the early palæolithic times to the eighteenth century.

The department has in its possession the impressions of thousands of valuable inscriptions, scores of original copper-plates and more than three thousand fine photographs of the great architectural and sculptural monuments of the State. In addition to these, the collection of nearly five thousand ancient coins belonging to the Government of Mysore and the transfer from the excavation field of the numerous ceramic and other finds made it necessary for a museum to be organized. A small office museum has now been started.

There are nearly two hundred and fifty ancient monuments in the State which are of historical or architectural importance. Most of these have been declared 'protected' under the Ancient Monuments Preservation Regulation and classified for conservation purposes. The Archæological Department has been very actively working for the preservation of these monuments by inspecting them during its tours, reporting on their condition, initiating conservation,

scrutinizing all proposals for repairs and advising and acting as a technical authority on all historical and archæological matters. An important piece of work now in progress is the conservation of the beautiful gems of Hoysala architecture which have won for Belur, Halebid and other places their great fame. The famous monuments in these places were in a dangerous condition. Steps have now been taken to repair them and put them as far as possible into their original form; and generous special grants have been made by the Government of Mysore for this purpose.

In addition to the above activities the Archæological Department has been functioning as a sort of enquiry office for numerous matters connected with the history, archæology and culture of South India. The *Annual Report* of the Archæological Department, which publishes the work of each year in an artistic and attractive form, has been highly appreciated by scholars all over the world.

M. H. KRISHNA.

(c) BARODA

His Highness Sir Sayaji Rao Gaekwad III, soon after he was invested with full powers, arranged for a survey of most of the important archæological monuments in his State by the late Dr. Burgess and Mr. Cousens, of the Indian Archæological Survey Department. Two richly illustrated volumes, named *The Antiquities of Dabhoi* and *The Architectural Antiquities of Northern Gujarat*, were published in 1888 and 1903 respectively. Officers of the Survey were also invited on several occasions to advise on the preservation of several monuments. Eventually, a separate State Department of Archæology was constituted in 1934. The results achieved are chiefly due to the interest taken by the State Government, headed by the Dewan, Sir V. T. Krishnamachariar.

Conservation.—The activities of the Department are concentrated on listing and conserving the monuments and examining by exploration or excavation the important sites in the State. The monuments which Baroda possesses lie scattered over Kathiawar as well as Gujarat. To name a few, the Rudramahālaya temple at Siddhpur, the Rani Vav well at Patan, the Nīlakantha temple at Sunak, the gateways at Vadnagar and Piludra and the sun temple at Modhera cannot fail to excite our admiration, not only for the architectural skill but also for the exquisitely fine carving they display. The State possesses a number of ancient sites, one of which, lying a few miles to the south of Vijapur, near the river Sabarmati, has already yielded palæolithic implements of considerable importance. The repairs to the Hira Gate at Dabhoi require special mention. This monument, in spite of damage and alterations suffered during the Muhammadan ascendancy, still retains a good deal of its original characteristics, and consequently might well be considered as a typical example of the mediæval architecture of Gujarat. It is Hindu in origin, and must have been constructed when the citadel of Dabhoi came into existence. Apparently, this citadel occupies the place which was originally known as 'Darbhavatī.' This 'Darbhavatī' (the town of *darbha*-grass) is mentioned in a long list of place-names along with 'Bhrigukachchha,' the modern Broach, in the *Romakasiddhānta*, which is quoted by Varāhamihira, the well-known Hindu astronomer of about the sixth century A.D. The foundation of the citadel of Dabhoi is usually ascribed to Jayasimha Siddharāja, the most famous Chāpotkata or Chāvadā king of Gujarat. The style of the architecture which developed in his time generally goes by the name of Gujarat style. It has close affinities with the Chālukyan style, and a number of structures in the Deccan and Rajputana were constructed after it. Though many buildings of this style in Gujarat are found adapted to Muhammadan wants, yet it goes without saying that it

belongs to one special geographical area and one period, and is Hindu in origin.

The citadel of Dabhoi has four gateways, which were probably constructed by the above-mentioned ruler. Two of them, the Hira Gate and the Baroda Gate, are splendid constructions, and still retain their original features. According to the *Vastupālacharita* it would appear that Tejahpāla, the rich minister of King Vīradhavala and the brother of Vastupāla, who together with Tejahpāla constructed the famous Nemināthа temple on Mount Abu, built or rather repaired the fort-walls. Its beautiful adjunct—namely, the Kālikā Mātā temple added to the north side—is largely preserved and affords us an idea of the original grandeur of the whole structure. The balcony window is splendidly carved. The outer side of the walls of this temple of Kālikā Mātā is adorned with a profuse ornamentation, where bands upon bands with moulding and bas-reliefs are engraved to cover the walls with various figures from basement to the very top. This sort of extravagant and reckless profusion of ornamentation, one is constrained to remark, does not indicate 'any refinement in taste,' but marks 'a falling off in the purity of the style.' The Hira gate and the adjoining Barhanpur gate, which is a much later addition and was in a parlous state, were selected for conservation, and much has been done towards their repairs.

Gujarat is known for its old stepped wells. Such stepped wells were known in the days of Kālidāsa, the immortal poet of India. One such well was built at Patan by Rani Udayamati, the queen of Bhīmadeva I (who was the contemporary of Mahmud of Ghazna and who ruled till 1063 A.D.). This once magnificent structure has largely suffered at the hands of the contractors who despoiled its material. The minute and exquisite carvings preserved in the remaining walls are evidently Saivite in origin. The subjects repre-

sented in it are well worth studying. It is exposed to weather and is considerably worn. It has also been selected for conservation, and much of the débris has been cleared, under which the lower portions of the remaining walls, the front side and the well proper were hidden.

The other interesting monuments marked for repair stand in Okhamandal and not very far from Dvārakā, the reputed *dhāma* (one of the four sacred places of pilgrimage) of the Hindus. Two are at Bardia, a small village some four miles to the east of Dvārakā. Both had hitherto remained unnoticed, in spite of their architectural value. One of them—namely, the Rāma temple, now known as *Maha-Prabhu-ni baithaka*—was covered with profuse carving, and had suffered more than its adjunct. Large trees have grown from its foundations and have caused considerable damage to the structure. The vegetation which was hiding it from view and the accumulated débris round its plinth and basement have been removed, so we can now form an idea of its original formation. The supplementary building, which, as its name implies, was dedicated to Lakshmana, has also been cleared. The third shrine stands at Vasai, the old Kanakanagarī, about six miles to the east of Dvārakā, and goes by the name of Jūnā-gadh (old fort). This was a Jain temple, built about the twelfth century A.D. in the same Gujarat style. It seems to have been used as a place of shelter by pirates. Probably it was destroyed when piracy was suppressed in the nineteenth century. The preserved portions show how beautiful was the carving with which the building was decorated. The rosettes or lotuses engraved in the ceiling stones are exquisite. The figures carved on the outside are worn and damaged; still they appear to have been well executed. One of the panels, which is still in the original position and which seems to represent *dharma* in the shape of a bull, still indicates the skill and the vigour with which its figures were sculptured. The sanctum was entirely demolished, and no trace

of it was left above the ground. The compound was filled with débris, and this once splendid structure was left as a mass of ruins. The ceiling of the dome and of the porch with its artistic floral designs stood in need of immediate repairs. The wall recently raised to close the temple from the east, which consisted of a motley assortment of stones, was not only ugly but also unsafe. The nave and the two side walls of the façade have now been reconstructed. The compound has been cleared of the débris and the original plan traced out. The stone pavement around the temple has also been exposed to view. The outer porch has been repaired, and the large gate towards the south of the compound has also been opened and conserved. The few repairs that have yet to be done will soon be completed to the satisfaction of the villagers and to meet the requirements of archæology.

Exploration.—It is generally believed that the early Indus valley civilization spread as far as Cambay and the valleys of the Narbada and the Tapti. Prehistoric remains have also been unearthed in these parts. Dvāravatī (Dwarka) of epic fame was probably so called because of its having been a *dvāra* (door) for the advent of the people who were the builders of that early civilization. With these considerations in view I decided to investigate some of the old sites and see if traces of that remote period could be found. The mighty river Indus had a lower course in early days, and the Rann of Kachchha (Cutch) may have been watered by it. I decided to try my spade in Kathiawar, the more so because an old stele of about the second century A.D., now lying in Dvārakā, was found in it several years ago. This is a very important relic and bears an inscription mentioning the self-sacrifice of a brave man in saving the life of his friend, in the reign of the Mahākshatrapa Svāmī Rudrasena I, who ruled from 199 to 222 A.D. Amreli is the headquarters of the Baroda territory lying in Kathiawar. Vala, the

ancient Valabhīpura, which was a seat of government till about the eighth century A.D., is about forty miles to the east of it. Here I selected an old mound, called Gohilwad Timbo, which lies between the two rivulets Vadi and Thebi, and started excavating it. My operations at this interesting site have proved very successful, and I have unearthed various antiquities of considerable interest and age. They consist of terra-cotta images which are Hindu as well as Buddhist in origin; pottery carved as well as plain; remains of burials in graves and urns; beads, coins, carved bangles of conch-shells; basements of rooms, built chiefly in undressed stone or rubble masonry; brick walls; a tomb made of bricks which measure 17 inches by 12 inches by $2\frac{3}{4}$ inches; a furnace which belonged to some smiths; and various other relics. Some of the coins unearthed here appear to be Āndhra, though they are much defaced. The Nasik cave inscriptions indicate that Kathiawar lay in the jurisdiction of the Āndhras, as Gautamīputra Sātakarni had annexed it to his territories about the year 106 A.D. So Āndhra coins can well be expected in these parts. Some of these are unshaped thin pieces, and the ingots of lead found with them would show that they were manufactured locally. Along with these relics a hoard of more than two thousand silver coins of Kumāragupta I, the well-known Imperial Gupta king who ruled in the fifth century A.D., was also unearthed. The work, when completed, will be described in a separate monograph.

Mūla-Dvārakā is a small port of Baroda, which lies on the west coast of India some thirty miles to the south-east of Veraval, the chief port of the Junagarh State. The current tradition is that it occupies the site of the Dvārakā of Krishna. It has an extensive rock lying just on the sea-shore, and is marked by a solitary deserted shrine, which is dedicated to Vishnu and goes by the name of Dvārakādhīsa. I considered it desirable to explore the site and see if any remains

of the Mahābhārata period could be traced. Several trenches which were dug showed the remains of buildings of the early mediæval period, mostly foundation walls of large stone blocks interspersed with bricks, belonging to different structures which were evidently built one after the other. Including the temple now standing, four strata have so far been found at this site. Some foundations are seen in the sea itself. On one side of the extant temple some iron pieces which appear to be connected with warfare were secured. No coin or sculpture or any other antiquity has been recovered except one image of Māruti and another of Ganesa. These finds appear to be early mediæval, but it is not unreasonable to hope that earlier remains will turn up when excavation is carried further and deeper.

Another interesting site taken up for exploration lies in the district of Navasari outside the village of Kamrej, the headquarters of a local subdivision of that name, lying on the left bank of the river Tapti. Kamrej was known to Ptolemy, the ancient geographer, who was a native of Egypt, and lived about the first half of the second century. He called it Kamane in his geographical account of India and southern Asia. Here I was able to secure very interesting coins, some of which are ancient *Kārshāpaṇas* or *Purāṇas* dating back to several centuries before Christ, while others are Avanti or Ujjain coins with hitherto unknown symbols. Unfortunately the site is largely under water, the Tapti having changed its course, and excavation has become difficult.

Yet another important site, though not so old, has also been selected for exploration. This was done chiefly at the instance of Sir V. T. Krishnamachariar, the enlightened Dewan of Baroda. Here the excavations have given very substantial results. This site belongs to Anahillavāda, the old capital of Gujarat, which was founded by Vanarāja, the Chāpotkata king, in the eighth century A.D. This capital became so rich and prosperous that foreigners

considered it to be incomparable in prosperity. Muhammadan writers—Alberūni, Masūdi, as well as Idrisi—were some of the eye-witnesses of its great prosperity. Jinamandana (*circa* 1436 A.D.), in his *Kumārapālaprabandha,* gives a vivid account of it. His description would show that there were several colleges on which enormous sums were lavished during the reign of Kumārapāla. Led by a very valuable though fragmentary stone inscription, built into a wall of a modern shrine in Patan, which alludes to a canal which was dug by Siddharāja, the powerful and successful king of mediæval Gujarat, I selected a site lying some two miles away from the present town of Patan. On one side of the site I opened remains of a Siva temple which was largely built of white marble, carved as well as plain, including a profusely carved stone pillar. On the other side, towards the north, I succeeded, after removing a huge amount of débris to a depth of some twenty feet below the present ground level, in opening the basement of two pavilions and some forty-eight stone columns with their lintels or parts of the entablatures. In all probability these remains form part of the water-works or aqueduct constructed by the skilful engineers of Siddharāja, as can be inferred from the inscription alluded to above. I am very hopeful of disclosing to view these water-works. No vestige was to be seen on the surface when I started the excavations.

The department has also undertaken the compilation of an inventory of the monuments in the State. So far more than three hundred monuments of different dates have been registered. They are of about the twelfth century A.D. Some of them may well be called architectural gems.

Inscriptions.—About one hundred and fifty inscriptions have so far been secured. The earliest of them, which is a sepulchral record, as mentioned above, belongs to the reign of Rudrasena I, the Kshatrapa king. Two hitherto unpublished copper-plates of the Silāhāra

ruler Aparājita, dated in the Saka year 915, are also in the collection. These charters are preserved in the State Museum at Baroda. Several old coins have been secured by the department in addition to those mentioned above. They include coins of Kshaharātas, Kshatrapas, Guptas, Traikūtakas, and others. Their inventory is given with necessary details in my Second Annual Report.

Among the works of old Jaina art, I have brought to light two interesting metal pieces, both bearing dated inscriptions. Their representations are given in my First Annual Report. Both of them are undoubtedly fine specimens of the work of the metallurgic craftsman of Gujarat in the fifteenth and sixteenth centuries, to which they belong.

Besides the Annual Reports, I have issued two Departmental Memoirs with which I have started a fresh series connected with the name of our illustrious ruler, the Maharaja Gaekwad. One of them is entitled *Indian Pictorial Art as Developed in Book-Illustrations*, and covers new ground in that with the aid of suitable examples it proves that pictorial art in India developed in book illustrations as it did in other ways. The second memoir is on the Asokan Rock at Girnar. It is intended to be a guide for the study of the three important records incised on the famous rock at Girnar: the first forms one of the well-known rock edicts of Asoka the Great; the second gives the important Sanskrit inscription of Rudradāman, the Mahākshatrapa king; and the third the well-known epigraph of Skandagupta, the great Gupta monarch who very successfully routed the Huns and was perhaps the most successful of the Gupta emperors of India in that respect. This memoir gives the text of these highly valuable inscriptions in Devanagari with transcript and translation in English. The introduction supplies all useful information in a collective form; and a table of contents and an index are also provided.

HIRANANDA SASTRI.

(*d*) JAMMU AND KASHMIR

The first systematic survey of the archæological remains in Kashmir was made by Sir Alexander Cunningham, who published an account of what he called the Aryan Order of architecture in the *J.A.S.B.* (September, 1848, p. 242). He was followed by a number of scholars who devoted much care and research to the study of the Kashmir monuments. As these scholars and explorers came to Kashmir as visitors for short periods only, their work was necessarily not exhaustive. On the reorganization of the Archæological Survey of India in 1902 under the guidance of Sir John Marshall, the State also established an Archæological Department, and constituted it as a part of the Sanskrit Research Department, whose main function was to publish Sanskrit texts bearing on the Kashmir School of Saivism. Experience, however, showed that the arrangement did not yield satisfactory results, as the State officers concerned paid more attention to the editing and publication of Sanskrit texts than to the exploration and care of ancient monuments, which, though as important for the study of the old civilization as the texts, required a different kind of technical training and field operations of a varied character. Accordingly, the State constituted in 1912 a separate Archæological Department, with the sole function of excavating such monuments as were under the ground and preserving those that were above the ground, and an officer of the Archæological Survey of India, Daya Ram Sahni (now Rai Bahadur Daya Ram Sahni, C.I.E.) was appointed the first Superintendent of the new Archæological Department in the Jammu and Kashmir State. He was followed in 1917 by Pandit Hirananda Sastri, and in 1919 by the present writer, who held charge of the Department for ten years. In 1931, owing to financial stringency,

the Archæological Department ceased to exist as an independent Department, but happily it has recently been found possible to revive it. During the period beginning with Daya Ram Sahni's tenure of office and ending with 1929, a considerable amount of excavation work was done by the Department, which threw much light on the past history of Kashmir, and a number of monuments which had suffered heavily on account of the ravages of time and of the vandalism and callousness of successive generations was conserved.

The most notable achievements of the Archæological Department in the sphere of excavation are the operations at Avantipur, Parihasapura, Ushkar, Pandrethan, Martand and Harwan. Kashmir is fortunate in that it possesses a continuous history written centuries before the Muslims set foot in the country, and containing an accurate and chronologically correct account of mediæval Kashmir. The period preceding the sixth century A.D. is not described in such great detail, and its chronology is not very accurate; but it cannot be said that the first chapters of the *Rājatarangiṇī*, 'The River of Kings,' as Kalhana (*circa* 1148 A.D.) named his history of Kashmir (2 vols., ed. M. A. Stein, 1900), are for that reason devoid of value.

Apart from the very interesting light which the excavations mentioned above have thrown on the contemporary arts and crafts, it is of special importance to note that they have, in the main, corroborated Kalhana's historical account in respect of matters in which his history mentioned the places and events connected with them. As an example the case of Harwan might be cited; in the *Rājatarangiṇī* there is a brief reference to Shadarhadvana, 'The Grove of Six Saints,' as a Buddhist religious settlement where Nāgārjuna, the great Buddhist scholar, is said to have lived. Shadarhadvana was, on phonetic grounds, identified by Sir Aurel Stein with the modern village of Harwan, but there were no ancient

remains above ground which would establish its connection with the Buddhist site mentioned by Kalhana and implied by the name itself. As a result of a survey carried out by me in the neighbourhood, as has been described in the *Ancient Monuments of Kashmir* (India Society, 1933), excavations were started on the mountain-side directly above, and at a distance of about half a mile from, the village of Harwan. These excavations have revealed what are in some respects the most interesting archæological remains in Kashmir, unique in the character of their ornamentation and the style and the material of their construction. The monuments are all Buddhist, as is attested by their architectural character, as well as by the presence of a large assortment of fragments of Buddhist images and objects of worship discovered. Thus has conclusively been established the correctness of the assertion of Kalhana that there was a Buddhist settlement at Harwan, and as the monuments so far excavated form a series extending from roughly the third century A.D. to the eighth century, it is probable that Kalhana's statement regarding Nāgārjuna living at Harwan is correct. Another case is the most important of Kashmir's mediæval temples, *viz.*, Martand. But for the excavations carried out at this site, it would have been impossible to reconcile the statements made by Kalhana that a temple to Mārtānda, the Sun, was built by Ranāditya and that a similar temple was built at the same place by Lalitāditya, who lived in the eighth century, several centuries after Ranāditya. As a matter of fact, there has been considerable divergence of opinion on the subject, as there is only one temple in the locality, and there are no traces of any other building which could by the remotest chance be identified as the second temple mentioned by Kalhana. It was only after the present writer carried out excavations, which unfortunately are not yet complete, that it was discovered that in fact there were, and are, two temples, the earlier temple being built

over, and completely enveloped by, the later temple, which closely follows the lines of the older temple, but is much larger. Apparently what had happened was that Lalitāditya, anxious to dedicate a temple to the Sun-God, found that the temple built by Ranāditya, having been in existence for centuries, would continue to attract more worshippers by reason of its antiquity and long-established sanctity. As he could neither deprive Ranāditya's temple of its sanctity, nor demolish it (which would have been a grievous sin), he adopted an ingenious device by which his temple bodily absorbed, as it were, the older temple, and, of course, appropriated its sanctity. In this case, too, the excavations carried out by the Archæological Department have corroborated Kalhana's history.

It may be worth while here to make mention of the preliminary exploratory surveys which, though not productive of results of a spectacular character, are necessary both as a foundation for serious antiquarian research, as well as for collection of what might be called floating material for the construction of history—to wit, folk tales and songs, myths and legends connected with shrines and mountains and valleys, and lakes and rivers. Kashmir, like most mountainous countries, is especially rich in such material, and some of it has been recorded. The Departmental Surveys carried out by the writer have been described in short monographs—*e.g.*, (*a*) *Antiquities of Bhimbar and Rajauri*, published in 1923 by the Government of India; (*b*) *Antiquities of Marev-Wadwan*, published in 1924 by the Government of the Jammu and Kashmir State; (*c*) *Antiquities of Basahli and Ramnagar*, published in *Indian Art and Letters* (Vol. VII, No. 2). These memoirs deal mainly with the monuments existing in these not very commonly known regions of the Jammu and Kashmir State, and establish the fact that in the past Kashmir proper—that is, the valley of Kashmir—had a political and cultural influence over the neighbouring regions quite dispro-

portionate to its small size. Indeed, Kashmir and its people seem to have wielded a considerable influence over the cultural history of India, as from the earliest times the country was famed as a seat of learning and sanctity throughout India, and despite the smallness of its material resources, it was at times able to extend its political sway far beyond its natural boundaries. This has now been corroborated by the style of mediæval monuments described in the monographs mentioned above, and by other monuments in Northern Punjab, as well as by an important find of Kashmir coins in the United Provinces.

In regard to excavations, the principal sites explored are Avantipur, Martand, Parihasapura, Ushkar and Harwan. The history of the first three sites is well known both from the *Rājatarangiṇī* and from local tradition. The remains excavated at Avantipur and Martand are Hindu, those at Parihasapura are partly Hindu and partly Buddhist, while those at Ushkar and Harwan are entirely Buddhist. Though it is possible to trace the growth of the mediæval architectural style of Kashmir with a fair amount of accuracy, the divergence between the older and the later—roughly between the structures dating before and after the sixth century A.D.—is so marked, especially in regard to materials, that at first sight they appear wholly unconnected with each other. The later group of monuments, dating from the sixth century to the advent of Muslims into the country in the fourteenth century, form a homogeneous group built, with slight variations, on one plan, and of the same material, *viz.*, ashlar-dressed grey and greenish limestone and granite. In plan each unit comprises a shrine built exactly in the centre of a rectangular courtyard, which in the case of large and important temples is cellular and colonnaded, and in the case of smaller ones, a more or less plain wall. It is remarkable how closely the same uniform plan was adhered to throughout the centuries,

though the buildings vary in size and wealth of decorative detail. Generally speaking, the temples deteriorate in size as the power and prosperity of the country decrease, until at last the magnificent shrine of Martand or Avantipur is found to have dwindled into a miniature cube of three feet or so, cut out of a single stone, like a dwarf possessing all the limbs and features, but not the size of a full-grown man.

The excavations have yielded interesting evidence establishing the catholicity of the Kashmir mediæval rulers, as vouched for by Kalhana. Take the case of Lalitāditya—who was probably the greatest king of mediæval Kashmir, and a great conqueror. Though Hindu by faith, he was a great patron of merit, irrespective of religion. He is said to have established several townships and built religious shrines both Hindu and Buddhist. The best known of the structures attributed to him is the temple of Martand, but at Parihasapura we find a group of monuments of great magnitude and architectural beauty, built on one of the most picturesque sites in the country, dedicated to a religion not his own, *viz.*, Buddhism. There is a large *chaitya* (cave temple), a large stupa, and a very spacious monastery built side by side on one plateau, while on a neighbouring plateau, though not occupying a site of the same grandeur, is the group of temples belonging to his own religion.

Lalitāditya was not a philosopher, but a soldier and administrator. Religion to him was a matter of faith, and not a thing to quarrel over. Hence his even-handed patronage of the two religions that existed in his time.

The mediæval monuments of Kashmir have received greater attention than the older ones at the hands of scholars, for the reason, firstly, of their remarkable beauty, and, secondly, of the fact that practically all of them were more or less above ground and exposed to view, and their study did not entail much preliminary

exploration. The case is different with the more ancient monuments—*e.g.*, Ushkar and Harwan. According to Kalhana, Huvishka, a Kushāna ruler of Kanishka's dynasty, built a town in Kashmir and named it after himself. The modern village of Ushkar had been identified with Huvishkapura. It contained a large stupa, which unfortunately had suffered more at the hands of the ignorant explorer than at those of the deliberate vandal. The excavations, which were conducted by the Archæological Department under the guidance of Rai Bahadur Daya Ram Sahni, besides yielding a number of exceedingly interesting and beautiful terra-cotta heads of the late Kushāna period (*circa* 300 A.D.), have yielded interesting evidence showing that, like the temple of Martand, the stupa of Ushkar in all probability represents two stupas, one enveloping the other, the earlier and inner one being contemporary with the terra-cottas mentioned above, and the later one probably belonging to the eighth or ninth century A.D.

In certain respects, however, the remains at Harwan are more interesting than any others in Kashmir, as the remains discovered there are in several respects unique. Though, over forty years ago, some moulded tiles had been exhumed when the water conduit, which supplies the city of Srinagar with its drinking water, was excavated, no attempt seems to have been made to investigate the possibility of archæological remains in the neighbourhood. As described in *Ancient Monuments of Kashmir* (1933), it was the existence of a barren field in the midst of cultivation that led the present writer to the conclusion that there might be such remains underground. This conclusion was strengthened by the fact that the field was full of potsherds. Excavations were started, and soon it became obvious that an exceptionally valuable archæological site had been discovered. The structures brought to light were built in different strata, and belonged to different periods, extending from the third

century to the eighth century A.D., and showed, according to the difference in the period, divergence in style and material. The earliest, of which only a piece of walling of what presumably was a quadrangle remained, is built of small river pebbles, measuring not more than two or three inches in length and an inch or two in width. These pebbles are closely packed together, and make an effective, though not structurally sound, piece of work, as they are built in mud and not in lime. There is reason to believe that the face of the wall was covered with plaster, which was of mud, too, possibly decorated with a coloured clay wash. Apparently the reason why the wall was built of small pebbles was the old belief that the more the labour expended on a religious building, the greater the merit which accrued to the builder. Anyhow, either the faith declined, or the succeeding generations realised the structural defectiveness of a pebble wall; the third and fourth century saw the 'pebble style' replaced by the 'diaper-pebble' style of building. The former consisted of structures built of large stones, the spaces between the stones being filled up with pebbles. The 'diaper-pebble' style is much coarser; soon it gave place to the typical ashlar-dressed stone building of mediæval Kashmir. It is possible that the revival of art in India under the Guptas (320-697 A.D.) had something to do with the replacement in Kashmir of the more primitive style of the early centuries of the Christian era by the more ornate and infinitely more massive and durable architecture which is so characteristic of mediæval Hindu Kashmir; the pediments and fluted columns and colonnades reminiscent of Greek architecture form a remarkable feature of this style.

So much for exploratory work.

The difficulty which the authority entrusted with archæological work has to encounter is the preservation after exposure of the monuments which were safely buried under the earth, so that in a

climate which is highly variable they may not disappear in a few years owing to the inclemency of the weather and the depredations both of vegetable growth and hunters of antiques and souvenirs. The policy of the Archæological Department in the Jammu and Kashmir State has been not to expose to view what cannot adequately be protected. Thus at Harwan, where the remains are such that they can easily be removed, damaged, or disfigured, only a small portion of the tiled courtyard of the apsidal temple has been exposed, and the rest—by far the greater part—was, after it had been carefully excavated and photographed, reburied until such time as funds shall become available for the construction of suitable glazed sheds. With regard to monuments which were, so far as their superstructure was concerned, already exposed to view, the problem was different. They had, through the centuries, been badly despoiled. In all except one or two cases, the entire roof had disappeared, and enormous trees had taken root in the masonry and pulled it to pieces. The first task was to cut down the trees—a by no means easy task, as in most cases the roots had penetrated the core of the masonry in such a manner that, though their insidious progress had undermined the structure, yet in the existing circumstances it was as dangerous to remove them as to let them remain as they were. This delicate task had to be carefully performed, and systematic work had to be carried on for several years before really satisfactory results could be achieved. The removal of the vegetation from the monuments was only a preliminary measure in the task of actual conservation. In most cases this took the form of cement-grouting and underpinning and strengthening of masonry, since restoration was both impossible and undesirable, except in the case of such old edifices as were still in actual use—*e.g.*, the Mughal Gardens, which in Kashmir are in a category by themselves, and the great Jami Masjid, among others. The Gardens,

which were originally laid out by Jahangir (1605-27) and Shah Jahan (1628-58) for their own use, have for generations been public property, and have played, and are playing, such an intimate part in the life of Kashmir, whether of the residents or of tourists, that it is impossible to think of the valley without Shalimar and Nishat, Chashma-i Shahi and Achabal. Accordingly, so far as the exigencies of the present-day conditions, and, of course, the funds, permitted, these gardens have been restored. The fountains and cascades play as they probably did when Jahangir and Nur Jahan held court and dispensed largesse on the smooth lawns of the Shalimar under the shade of the lordly *chinar* (oriental plane). It must, however, be admitted that all restoration is not strictly in accordance with the style of the period to which the buildings belonged. Nevertheless, whatever is new is unobtrusive, and the spirit that pervades the Mughal Gardens of Kashmir is that of the great Emperors and their consorts and the nobles of their court, gracious and leisurely, reminding one of the spacious times that have passed away, perhaps for ever.

To the question, 'What has the Archæological Department done?' many replies are possible and have been given, but there is one reply, which was once given in my presence, which struck rather an unusual note, *viz.*, 'It has given us our self-respect, and increased our national stature.' It seemed to me that this was a very true statement of the case from one, and a very important, point of view. As a result of the work of the Department, new light has been thrown on the past of the country, and the heritage which we received from our forbears is being preserved and passed on to posterity in a more satisfactory condition than it was when it came into our possession.[1, 2]

RAM CHANDRA KAK.

[For NOTES, see p. 323.]

(*e*) GWALIOR

The territories of Gwalior State are rich in archæological remains covering a period exceeding two thousand years. Sir A. Cunningham, the great pioneer of archæological exploration in India, and his assistants visited a few places in the State between the years 1862 and 1885, and their notes appeared in his *Arch. Surv. Reports* (Vols. II, VII, X, XX and XXI). Mr. James Fergusson, in his *History of Indian and Eastern Architecture* (first published in 1876; revised edition, Murray, 1910), described and reviewed some of the monuments at Gwalior, Udaypur, Gyaraspur and Bagh. Drs. Rajendralal Mitra, Buhler, Kielhorn, Fleet and Hultzsch edited some of the inscriptions in the State, chiefly in the *Indian Antiquary* and the *Epigraphia Indica*. The *Gwalior State Gazetteer*, compiled in 1908 under the superintendence of Colonel Luard, contains brief references to some of the places of archæological interest. In the early eighties of the last century a good deal of clearance and repair work was carried out at the monuments on the Gwalior Fort by Major Keith, acting under the orders of Major H. H. Cole, the then Curator of National Monuments in India. Later on, part of Mansingh's Palace was repaired by the Gwalior Military Department. The tomb of Muhammad Ghaus and the Jami Masjid were partly conserved by Mr. H. H. Lake, the Superintending Engineer of the State, who also made some desultory excavations at Besnagar in 1910.

In 1913, under the inspiration of Sir John Marshall, the then Director-General of Archæology in India, His Highness the late Maharaja Sir Madhav Rao Scindia of Gwalior instituted a regular Archæological Department to explore and preserve the precious relics of the ancient art, architecture and culture in his State, and placed it in charge of the present writer, who was a pupil of Sir John Marshall and is the present Director of Archæology in the State.

The main task of the Department during its first six years was to compile a complete and accurate list of monuments. Every important monument was visited and notes were made regarding its history, the legends connected therewith, its architectural and artistic features, its inscriptions, if any, its present condition and the measures necessary to secure its preservation. Photographs were taken and drawings made, and mechanical estampages were prepared of all available inscriptions for permanent record. As a result of this exploration a number of ancient sites, buildings, sculptures and inscriptions which were hitherto unknown were discovered, and new light shed on many a monument regarding which the information already available was either inaccurate or incomplete. It is proposed to publish in book form the information thus collected.

The Gwalior territories include the sites of important ancient cities such as Ujjayinī (near modern Ujjain), Vidisā (Besnagar, near modern Bhilsa), Kāntipurī (modern Kotwal), Padmāvatī (modern Pawaya, and not Narwar as held by Cunningham), Tumbāvana (modern Tumain), and Devagiri (modern Deva Dungari), which, when properly excavated, are likely to throw a flood of new light on ancient history.

Of these Ujjayinī is the most ancient and perhaps the most important. It is mentioned in the religious books and literature of the Buddhists, the Jains and the Hindus. It is associated with the names of popular heroes like Udayana and Vikramāditya of hoary legend. It was a famous seat of religion, learning, commerce and culture, long before the beginning of the Christian era. It was the capital of the western provinces of the Mauryan and the Gupta empires. The city of Vidisā is mentioned in the Hindu, Buddhist and Jain literature and the *Purāṇas*. It was the capital of Agnimitra, a Sunga prince immortalized by Kālidāsa in his *Mālavikāgnimitra*. Kāntipurī and Padmāvatī, two of the three capitals of the

Nāga kings who flourished in the third and fourth centuries A.D., are located in Gwalior State. Padmāvatī is vividly described by Bhavabhūti in his famous play *Mālatī Mādhava*, the scene of which is laid in that city. The place also appears to have been famous for a university, which attracted students from far-off places. Coins, brick foundations and other relics referable to the early centuries of the Christian era have been traced here. Dasapura possesses a number of relics of the fifth and sixth centuries A.D. Trial excavations were made here in 1923, which threw fresh light on the monuments of the place.

Tumbāvana is mentioned in the Buddhist literature as a stage on the old road from Srāvastī to Pratishthāna, and is also referred to in some of the votive inscriptions on the railing of the Great Stupa at Sanchi. A Gupta inscription mentioning the ancient name of the place, some rock-cut cells and remains of structural monuments and sculptures of the Gupta and mediæval periods have been found here. Devagiri, mentioned in the *Meghadūta* of Kālidāsa, has been identified with Deva Dungari, a small hill in the Ujjain district of Gwalior State.

Coming to monumental antiquities, Buddhist remains have survived at Besnagar, Bagh, Gyaraspur, Rajapur and Khejria-Bhop. The city of Besnagar was a well-known Buddhist centre, with which the penance grove at Sanchi with its stupas and *vihāras* (third century B.C. to tenth century A.D.) was closely related. Bagh possesses a series of large *vihāra* caves (fifth to seventh centuries A.D.) hewn out of rock and adorned with fine mural paintings, which, even in their present damaged condition, amply testify to the standard which the art of painting in India had attained in those days. Remnants of Buddhist stupas exist at Gyaraspur and Rajapur, while at Khejria-Bhop the inner face of a crescent-shaped hill is carved into a series of monastic dwellings with a *dagoba* in the middle.

Hindu and Jain relics are met with at several places. The earliest Hindu monument (second century B.C.) is a *Garuḍa* pillar at Besnagar, which, as an interesting Vaishnava inscription incised on it tells us, was erected by Heliodoros, a Greek who styled himself a Bhāgavata and had apparently embraced Hinduism. The Brahmanical caves excavated in the Udayagiri hill near Bhilsa possess some fine sculptures and inscriptions dating from the Gupta period (400 to 600 A.D.). The colossal image of Varāha is perhaps the largest and best in India. At Sondni, near Mandasor, lie two huge monoliths bearing inscriptions which recite the glory of the powerful king Yasodharman, who expelled the Huns from Central India towards the middle of the sixth century A.D. Hindu temples (600 to 1400 A.D.) are found at Gwalior and several other places. Perhaps the finest and best preserved is the Udayesvara temple at Udaypur, built in the eleventh century A.D. by Udayāditya, a Paramāra ruler of Malwa. Hindu monasteries (ninth-tenth centuries A.D.), rare specimens of massive stone architecture, exist at Surwaya, Ranod, Terahi and Kadwaha. Raja Mansingh's Palace and the Gujari Mahal on the Gwalior Fort (fifteenth century A.D.) are fine examples of Rajput civil architecture. A large number of inscribed stones and memorial pillars, commemorating warriors who lost their lives on battlefields, have also been listed. The oldest of these memorial pillars (sixth century A.D.) was found at Hasalpur.

Jain monuments in the State are equally numerous and interesting, although none of them go back beyond the ninth or tenth century A.D. The rock-cut Jain statues on the fort rock at Gwalior are well known. Similar rock-cut figures, though smaller in size and number, are cut out in a hill at Chanderi. There are numerous other centres of Jain remains, which include temples and sculptures.

Specimens of Muhammadan art are found at Ujjain, Chanderi, Bhonrasa, Udaypur and Gwalior. The picturesque water palace

known as Kaliadeh is pleasantly situated on an island in the Sipra river near Ujjain. Koshak Mahal, a noble four-storied edifice at Fatehabad (near Chanderi), the Jama Masjid, Shahzadi-ka-Roza and Battisi Baodi at Chanderi are other notable specimens of Pathan architecture in the Mandu style (fifteenth century A.D.). The mausoleum of Muhammad Ghaus at Gwalior is a very fine tomb of the early Mughal period (sixteenth century A.D.), showing varied designs of pierced stone-work of great elegance.

The State also possesses three great hill fortresses—Gwalior, Narwar and Chanderi—and numerous others of archæological interest.

Conservation was commenced in earnest in 1920-21, and since then many of the important archæological monuments in the State have been repaired and maintained; but several years will be required to complete the conservation programme. In particular the following have been repaired according to the latest principles:

The temples at Suhania and Padhavli, the Gujari Mahal Palace, the tomb of Muhammad Ghaus, the tomb of Tansen at Gwalior, the temples and monastery at Surwaya, the monastery at Ranod, some palaces and mosques on the fort of Narwar, Koshak Mahal at Fatehabad near Chanderi, the rock-cut gateway, the Jama Masjid, and the tombs of Bada Madarsa and Shahzadi-ka-Roza at Chanderi, the Gadarmal temple, the Solah Khambhi hall, the Dasavatara and Satmadhi shrines and the Jain temple at Badoh, the great Udayesvara temple at Udaypur, the temples at Gyaraspur, the Bija Mandal mosque at Bhilsa, the Heliodoros pillar at Besnagar, the rock-cut caves at Udayagiri, the astronomical observatory at Ujjain, the Yasodharman pillars at Sondni near Mandasor, and the Nau-toran temple at Khor. The Buddhist caves at Bagh were freed from débris; new masonry columns were constructed; and the paintings were faithfully copied in colour and in outline.

At the same time the local public is being educated to appreciate and respect the ancient monuments; and measures are being taken to make them more easily accessible and better known to the travelling public.

The State possesses a large number of epigraphical records mostly engraved on stone. Most of these have been mechanically copied by the Department and the impressions have been preserved, properly classified and labelled. The original stones bearing the inscriptions, which had been displaced from their settings and were lying loose and uncared for in the ruins, have been collected and exhibited in the Archæological Museum at the Gujari Mahal, Gwalior.

The inscriptions range over the last two thousand years and refer to various kings of over a score of different ruling dynasties. Some of the earlier important Prakrit and Sanskrit inscriptions up to the sixth century are mentioned here: the Besnagar inscription of Heliodoros (*circa* 150 B.C.); the Udayagiri inscriptions of the time of Chandragupta II and Kumāragupta I (401-425 A.D.); the Pathari rock inscription of Maharaja Jayatsena (fifth century A.D.); the Mandasor inscriptions of Naravarman (404 A.D.), of Kumāragupta and Bandhuvarman (437-473 A.D.), of Govindagupta and Prabhākara (467-468 A.D.), and of Yasodharman Vishnuvardhana (533-4 A.D.); the Tumain inscription of Kumāragupta and Ghatotkachagupta (435 A.D.); the Gwalior inscription of Mihirakula (*circa* 525 A.D.); and the Bagh copper-plate grant of Maharaja Subandhu of Mahishmatī (fifth century A.D.).

All the epigraphical documents have been deciphered. Some of them have been published, and the publication of the rest will engage the attention of the Department in the near future.

The numismatic work of the Department consists chiefly of the examination of the treasure-trove coins found in the State. The coins thus examined during the last twelve years since the work was

entrusted to this Department numbered more than thirty thousand. The Department has made its own collection of select coins, partly acquired from treasure-trove finds, partly purchased from coin dealers, and partly received in exchange or as presents from antiquarian institutions from outside the State. Among the notable discoveries and acquisitions mention may be made of interesting punch-marked coins from Besnagar, Nāga coins from Kutwar, Narwari and Pawaya, and an almost complete set of Scindia coins. Some of the Nāga coins represent hitherto unknown kings—*e.g.*, Vrisha Nāga, Pun Nāga, Bhava Nāga, Vasu Nāga, etc. Typical coins covering all the periods of history are exhibited in the Museum.

The idea of having a Museum of Antiquities at Gwalior was conceived twenty-four years ago, simultaneously with the creation of the Archæological Department. The Museum was actually opened to the public early in 1922. It was housed in the Gujari Mahal, an old Rajput palace of the fifteenth century, which makes an appropriate setting for the fragmentary antiquarian exhibits. The collections comprise excavated pottery, terra-cottas, beads, relic caskets, iron implements, coins, inscriptions, capitals of pillars, stone and metal images, railings and architectural pieces ranging in date from the second century B.C. to the seventeenth century A.D. The Sunga, Gupta and mediæval periods are well represented and the exhibits are principally Brahmanic and Jain. The Museum is particularly rich in Brahmanic images, which represent most of the principal gods and goddesses of the Hindu Pantheon. Some of the sculptures are beautiful works of plastic art, and a few are such as have not been found elsewhere. Full-size copies of nine of the Bagh frescoes occupy one room, and another room contains a number of miniature paintings of the Mughal and Rajput schools and large photographs of important archæological monuments in the State. Every effort is being made to develop the Museum steadily and to make it more

and more useful and educative. It is now a well-known institution attracting annually a large number of visitors from various parts of the civilized world. It has evoked words of appreciation from many a visitor—especially from the representatives of the Empire Museums Association, who have mentioned it in their recent Report (London Museums Association, 1936) as one of the few well-kept museums in India.

The Department has issued so far the following publications; all are available at the office of the Department, Gwalior:—(1) *Annual Reports;* (2) *Archæology in Gwalior;* (3) *The Bagh Caves* (in association with the India Society); (4) *Gwalior Fort Album;* (5) *A Guide to the Archæological Museum at Gwalior;* (6) *A Guide to Chanderi;* (7) *Sight Seeing at Gwalior;* (8) *A Hand Book of Gwalior;* (9) *Surwaya;* and (10) *Directory of Forts,* Part 1.

The Department has hitherto directed its energies to the exploration and conservation of the archæological remains above ground and to the collection and exhibition of antiquities; but in the excavation of ancient sites Gwalior is rather behind the times. Yet it has not been altogether inactive in this useful field of research. Trial excavations have been carried out at Besnagar, Pawaya, Mandasor and Gyaraspur. Archæology in Gwalior is still a young Department, and naturally the first claim on its attention and funds was that of the ancient monuments which were exposed to the devastating influences of rain, weather and jungle. Now that fair progress has been achieved in this field, the Department can with good conscience, as in British India, take upon itself the additional responsibilities of the exploration of concealed monuments. Excavations and search of prehistoric sites will henceforward engage increasingly the attention of the Department.

The activities of the Department in the near future will be directed to the completion of the proposed programmes for con-

servation and publication, to the further development of the existing Museum, to the establishment of a Museum at Ujjain, the ancient capital of Malwa, to the formation of small local museums in the districts, to the search of prehistoric sites along the range of the Vindhya hills in the neighbourhood of the Narbada Valley, and last, but not least, to the excavation and exploration of the sites of ancient cities, pre-eminently Ujjayinī. Ancient Ujjayinī is an extensive site, for the great city, like Taxila, seems to have occupied different sites at different periods. Not only are the excavations likely to solve the mystery of the personality of Vikrama and the epoch of the so-called Vikrama era, which has been hitherto a matter of a long and almost interminable controversy among the antiquarian scholars of various shades of views, but they may even lead to other important discoveries.

M. B. Garde.

(*f*) TRAVANCORE

Travancore in the south-west is one of the most ancient Hindu States in India: its ruling house traces its descent from the old Chera kings, who are referred to as independent in the edicts of the Emperor Asoka Maurya of the third century B.C. It has an area of nearly 8,000 square miles, and is one of the most picturesque and thickly inhabited portions of India.

Archæological work in the State was first started in 1891 by the late P. Sundaram Pillai, an eminent scholar, who was then Professor of Philosophy in the State College at Trivandrum. The Archæological Department was actually started in 1896-97 by the Government of Travancore 'with a view to the collection and investigation of the available data relating to the political and economic history and ethnology of the country.' Mr. T. A. Gopinatha Rao was

appointed the first Archæological Superintendent in 1908, while the present writer was appointed Superintendent in 1928, and later Director. The work of the Department is found recorded in the Annual Reports and in the Travancore Archæological Series.

Travancore is rich in ancient temples: these are the oldest monuments in which are preserved much of the archæological, historical and artistic relics of the State. Two of the distinguishing characteristics of the typical Travancore temples are their wood carvings and their peculiar gable style of architecture. Wood carving is, indeed, one of the specialities of Travancore; and the temples and palaces, even the humble homes of ordinary villagers, once abounded in some kind of wood-work or other of great beauty and delicacy. The architecture of Travancore is very different from that of the rest of India. The circular central shrine surmounted by a conical dome, the square hall in front of the shrine, and the quadrangular walk round these, the small hall in front of the temple accommodating in it the sacrificial altar, the triangular gables, and the dormer windows, are all characteristic of Travancore.

Prehistoric antiquities exist in abundance on the hill-sides of Travancore. These are mostly dolmens, menhirs and cromlechs. No relics of the palæolithic age are found in the State; but megalithic monuments of the neolithic age are largely seen on the high ranges, up to 4,000 feet. The dolmens are the most important monuments of the megaliths. An examination of five of them, some covered with earth, some not, shows them to be of dimensions sufficient to contain several tombs, and formed of various crude blocks of stone, the upper horizontal stone being supported on a level with the earth by two or more vertical ones. Certain of the dolmens have a summit cist; some have a single, some a double circle of stones surrounding them, with two stones generally protruding slightly through the surface of the tumulus. A noteworthy

feature of these dolmens of Travancore is that in their erection certain architectural methods and proportions have clearly been employed. In the first place, by the use of orthostatic blocks of stone, a maximum wall area is provided with a minimum of thickness. Secondly, mortar has not been used in the masonry, which in itself is coarse and rugged. The dolmens so far discovered are situated on a rocky tableland, and are in groups of three, four or five, around each of which stone circles are seen. The majority of them lie in an east-to-west direction; a few are placed north-to-south. The floor of all the dolmens is paved with a flat stone slab; and rubble stone packing is seen on the side of a few. These dolmens are of two kinds, those consisting of four stones, *viz.*, three supporting stones and one cap-stone, leaving one side open; and those in which the chamber is closed by a fourth stone. In the latter case, the fourth stone has invariably a circular opening.

Besides dolmens, stone cists or cistavans, called cairns by some writers, are also found on the Travancore hills, particularly at Kumili and Vandiperiyar, in association with stone circles, pillar stones and dolmens. These cistavans are found, not only singly but in twos and threes, and in groups. The elaborate nature of the grave and the labour involved in constructing it lead to the inference that only important persons could have been honoured by this form of interment. The stone circles vary in diameter, from about fifteen feet; and one important feature of the cists found in Travancore is that one of the slabs contains a circular hole on its side. The relics discovered in cists and dolmens are only crude and broken pottery, and no skulls or implements, sometimes characteristic of such hypogea in other countries. Bones are rarely found.

Burial urns are by far the most important relics of the prehistoric period seen in Travancore; and two specimens of these, excavated from Eraniel, are exhibited in the State Museum, Trivandrum,

along with a few specimens of crude pottery and iron implements. These urns invariably contain small pots which are glazed inside and have either a bead or leaf pattern drawing on their exterior.

A systematic exploration of the country has brought to light the existence of ancient Jain, Buddhist, Hindu and Christian relics. In the temples at Chitaral, Nagercoil and Kallil, Jain images of Tīrthankaras and Padmāvatī Devī, belonging to the ninth century A.D., are seen. The only Buddhist vestiges so far discovered are four stone images of Buddha in meditation at Karumadi, Mavelikara, Maruturkulangara and Pallikal, the last of which has been placed in the State Museum. The Christian antiquities comprise mostly the Pehlevi crosses at Kottayam Valiapalli, Muttusira, Kadamattam and Alangad.

The ancient relics of the Hindus are found in old temples and palaces of the State, some of which have also a historical and architectural importance. The only Muhammadan monuments of special interest are the mosques at Quilon and Tiruvidangod. From the archæological point of view, by far the most valuable antiquities in Travancore are inscriptions on stone, copper and palm-leaf. A survey of the State has resulted in the discovery of about 1,500 inscriptions. Over 1,300 of these are engraved on stone, 160 on copper plates, and the rest on palm-leaf. Some of these have much historical and palæographical importance. They throw considerable light on the early history of the Chera, Pāndya, Chola, Travancore and Vijayanagar kings and also of the Madura Naiks. The scripts employed in the inscriptions are Vatteluttu, Koleluttu, Grantha, Old Tamil and to a small extent Devanagari and Malayalam.

The epigraphs collected and deciphered are published by the State Archæological Department in the Travancore Archæological Series, of which seven volumes had been published up to September, 1937. They furnish the historian of South India with a complete

genealogy of the Chola kings, from the earliest times up to the time of Vīra Rājendra (tenth to eleventh centuries A.D.), and also the missing link for the reconstruction of a continuous history of the Cheras from Rājasekhara (ninth century A.D.) to Vīra Rāghava Chakravarti (tenth century A.D.). The Travancore inscriptions make a substantial contribution to the history of the Pāndyas; and for the first time a king, Jatāvarman Parāntaka Pāndya (twelfth century A.D.), hitherto unknown to the epigraphical world, has been brought to light in them. The existence of a dynasty of kings called the Āys, long unknown to South Indian epigraphy, has also been established by the discovery of a set of copper plates in which two kings, Ko-Karunāndakkan and Vikramāditya Varaguna (ninth century A.D.) are mentioned.

Besides offering a sure and reliable basis for the reconstruction of the ancient history of Travancore, these inscriptions are invaluable for the light they throw on Dravidian philology and place-names, and also on the ancient political, social and religious institutions of the country. A considerable number of the inscriptions record large grants to temples and charitable institutions; and a few relate to the conferment of privileges on religious bodies. It is seen from these records that a large number of villages had temples which were centres of civil life from early times, and were a powerful institution in the social, religious and political life of the country. These temples, constituting a corporation enjoying the generous patronage of ruling kings, and richly endowed by a devout people, were not only the repositories of the antiquities of the State, but a small State by themselves, administering varied kinds of civic functions.

In addition to their wealth of inscriptions, the temples of Travancore abound also in ancient works of art such as sculptures in stone and bronze, mural paintings and wood carvings. The paintings so far discovered go to establish a long pictorial tradition

in the State. The earliest of the frescoes (ninth century A.D.) are those on the walls of the rock-cut cave temple at Tirunandikkara in South Travancore, which consist of three figures—Siva, Pārvatī and a devotee. These have a surpassing finish of technique, and an ineffable expression of divine grace. Similar paintings belonging to the eleventh and twelfth centuries were in existence on the walls and ceilings of the Suchindram temple. Precious relics of a fourteenth-century painting, belonging to the reign of Āditya Varma Sarvānganātha, a king of Travancore, are found on the walls of the shrine of Krishna inside the Srī Padmanābhasvāmin temple, Trivandrum. One panel of this mural, depicting a music party, is delightful in style and a marvellous accomplishment in pictorial art. The most striking of the murals in Travancore is the one representing the dance of Natarāja, painted on the gateway of the temple at Ettumanur, in North Travancore, belonging to a period not later than the middle of the sixteenth century. This painting occupies a wall space of about a hundred square feet and is, according to Dr. A. K. Coomaraswamy, the only old specimen of Dravidian painting. Next in importance are the mural paintings on the walls of the topmost floor of the three-storeyed palace at Padmanabhapuram, the ancient capital of Travancore, belonging almost to the same period—*i.e.*, sixteenth century. These are designed in a masterly manner and are wonderfully fresh and unmutilated. A later work of pictorial art belonging to the early eighteenth century is on the walls of the central shrine of the Srī Padmanābhasvāmin temple, Trivandrum. All these paintings are executed in a purely native style; and the last is perhaps the latest record of indigenous painting of the best sort on a somewhat large scale.

The earliest sculptures found in the State date back to the eighth century A.D. and are seen at Kaviyur and Vilinyam. Fine bronzes of Siva, Pārvatī, Cheramānperumāl and Saivite saints belonging to

the eleventh and twelfth centuries are preserved in the Suchindram temple. These images are wrought carefully with due regard to their trappings and ornamentation, and show an elaborate elegance of workmanship.

The art of woodcarving existed in Travancore from early times; and its best specimens are found in the temples of Palur, Onakur, Tirumaradi, Chonakara, Vettikulangara and Padmanabhapuram. They have a marvellous intricacy and artistic finish, and are boldly designed and expressive of exquisite emotions. In them are illustrated scenes and episodes from the well-known Indian epics. The best specimens of woodcarving convey an impression of an intense inner life, in addition to the exquisite rhythm and beauty in their representation.

Travancore enjoyed extensive commercial relations from early times with the West; and a large number of Roman coins, dating from 30 B.C. to 547 A.D., have been found. There is in the palace of H.H. the Maharaja a very good collection of foreign coins, including Roman. Portions of Travancore were at various times under the sway of foreign powers such as the Cholas, Pāndyas, and the Vijayanagar kings. The coins of all these dynasties and of Ceylon were current in the country. A few coins belonging to the Chera kings have also been discovered, and are now preserved in the Trivandrum Museum. They are double-die coins, and have on each the symbols of the elephant, which is an emblem of royalty, the lotus, swastika, the crescent moon and the sun on the obverse; and an elephant goad, a bow, a filled pot, and a human figure on the reverse. With the advent of the Portuguese, the Dutch and the English, European coins were also introduced into the country, the most important of them being the Venetian sequins. The oldest indigenous coin, even now occasionally found, is the *rasi*, weighing $5\frac{5}{8}$ grains. Sir Walter Elliot, the eminent numismatist, says that the

Travancore mint is the only Hindu *thanka-sala* (mint) still maintained in its original form. Travancore has still the prerogative of its own coinage.

Of the ancient monuments in Travancore, the temples are by far the most important from a historical and archæological point of view. They have a distinctiveness of structure in their gable roofs. In the typical Travancore temples there is no difference in construction, up to the entablature, from the Dravidian style of architecture. The distinction becomes visible in the upper portion of the structure, where a wooden roof, covered most often with copper sheets, or with tiles, and ornamented with triangular gables, is found. It is worthy of note in this connection that spires are absent in a typical Travancore temple, and the inner shrine has a square or round base with a finial in pyramidal form. The earliest of the monuments in the State is the cave temple at Kaviyur, belonging to the latter half of the eighth century A.D., if not earlier, as suggested by its close resemblance to early Pallava work. This cave has the usual orientation of a Siva shrine, its entrance facing west. Two pillars divide the breadth of the cave into three openings. The central shrine is a square cell enshrining in its middle a rock-cut *linga,* and devoid of ornamentation. The rectangular hall in front of this sanctum contains on either side of the doorway two niches, which are flanked by pilasters. Almost to the same period belongs the rock-cut Siva temple at Tirunandikara, with a hall and a cell reached by a flight of three steps. Precious traces of old fresco paintings and four inscriptions are all the ancient relics found in this temple. A monument belonging to a slightly later date (ninth century A.D.) is the old Jain temple at the Tiruchanat Malai, in the village of Chitaral. Among other ancient edifices, the most important is the temple at Suchindram, which may rightly be called the Parthenon of the State. Though many of the early structures do not at

present exist in this temple, there are parts in it which are attractive to a student of ancient history. The oldest among them is the rock on the south-west corner near the Kailāsa shrine with many inscriptions of great historic value.

Like the temples, a few of the Christian Churches in the State have also an archæological and historical interest. It was in the church at Udayamperur that the famous Synod of Diamper was held on June 20th, 1599 A.D., presided over by Archbishop Alexius Menezes. The structures of all the churches are not earlier than the sixteenth century A.D. The European monuments are by far the best conserved in the State. They are the old forts at Pallipuram and Kottapuram, and the chapel and tombstones within the Udayagiri fort in South Travancore. Of these, the fort at Pallipuram is the earliest extant European monument in India, built in 1507 A.D. There are three other forts preserved as historical monuments, dating from the eighteenth century.

Excavation is quite a recent development. The first attempt in this direction resulted in the discovery of the relics of an old Vishnu temple belonging to the ninth century A.D. at Naranattukavu, Perumpalutur, fourteen miles south-west of Trivandrum, the capital of the State. It is expected that, with the systematic exploration of ancient sites in the State, the work of excavation will yield valuable results, illustrative of the arts and handicrafts of the past, the temples in which the people worshipped, the houses in which they lived, and, above all, the setting in which their lives were spent.

R. V. Poduval.

(g) JAIPUR

The past rulers of the Jaipur State have enjoyed well-deserved fame for their deep interest in works of art and architecture and in

the advancement of science and literature. The city of Jaipur, founded by Maharaja Sawai Jai Singhji more than two hundred years ago, has remained a model of city planning in India to this day. The astronomical observatories, consisting of huge masonry instruments constructed by the same Maharaja at Jaipur, Delhi, Benares and Ujjain, are being maintained in good repair; and the valuable collections of manuscripts and paintings of the Mughal period are a priceless treasure, which attracts visitors to this historic city.

Some of the monuments of the Jaipur State were inspected by Sir A. Cunningham in 1864-65, others by his assistant, Mr. A. C. L. Carlleyle, in 1871-72, and many of these again by Dr. D. R. Bhandarkar during the year 1909-10. Repairs were occasionally carried out to some of the ancient monuments in the State, such as the palaces at Amber. The Government of His Highness the Maharaja Sir Sawai Mansinghji Bahadur, G.C.I.E., Ruler of Jaipur, has earned the gratitude of all lovers of ancient art and archæology by establishing in 1935 a State Archæological Department. The writer of this chapter is the Director, and is grateful to the Finance Minister, Rai Bahadur Pandit Amar Nath Atal, M.A., for enlightened interest in the activities of the Department.

The most interesting of these tasks has been the exploration of an ancient site near Bairat, fifty-two miles from the headquarters, on the road leading to Delhi. Tradition identifies the town of Bairat with Virātapura, the capital of Virāta, the king of the Matsya country, at whose court the five Pāndava heroes and their spouse Draupadī passed incognito the thirteenth year of their exile. The present town stands upon a lofty artificial mound in the middle of a beautiful valley. This mound may be expected to reveal numerous strata of buildings ranging from early times down to the Mughal period. The only monument of interest that now remains intact in

the city is a Jain temple, which contains a long and well-preserved Sanskrit inscription recording the construction in the Saka year 1509 (1587 A.D.) of this temple under the name of Indravihāra, the consecration of which was performed by the well-known Jain saint Hīravijaya Sūri, whose teaching induced Akbar to grant prohibition of killing of animals on 106 days in the year, amnesty to prisoners and gifts of books to the saint himself. (See Rai Bahadur Daya Ram Sahni, *Archæological Remains and Excavations at Bairat*, Department of Archæology, Jaipur State, 1937.)

The site selected for excavation in this valley was the hill known as Bijak-ki-Pahari, or 'the Inscription Hill,' because it was from this hill that the inscribed stone known as the 'Bairat-Calcutta edict stone' was removed to Calcutta by Major Burt in 1840. This edict recommends the study of select passages from the Buddhist scripture and supplies definite proof of Asoka's faith in the Buddhist religion. The remains on the summit of this hill are divided into two distinct terraces, the western one being about thirty feet higher than the other. The excavations on the upper terrace revealed the remains of a large Buddhist monastery, constructed on a more elaborate plan than those familiar to us from other Buddhist sites. The bricks used in the building of this monument are large and well dimensioned, like those on the Indus valley sites. In the east wall of this monastery was found a hoard of thirty-six silver coins, eight of which, of the punch-marked type, were wrapped in a piece of real cotton cloth. The remaining twenty-eight coins represented issues of Greek and Indo-Greek kings, beginning with Heliokles (*circa* 140 B.C.), the last Greek king of Bactria, and ending with Hermaios (*circa* 20-45 A.D.). The most noteworthy structural remains brought to light on the lower terrace were those of a circular temple consisting of panels of large wedge-shaped bricks alternating with octagonal wooden columns which numbered twenty-six. There is a broad

circumambulatory passage of the same circular shape, and the temple had a wide entrance on the east. This is one of the oldest structural temples of the historical period found in India, and one of those which furnished models for the rock-cut cave temples of the type represented by the *chaitya* cave of the first century B.C. in the Tulja Lena group at Junnar. Like the latter, the newly discovered temple at Bairat enshrined a stupa, which was built of brick and crowned by an Asokan umbrella of polished Chunar sandstone. The stupa presumably contained a reliquary enclosed in a large stone bowl, fragments of which, together with those of the umbrella, were found; also bricks inscribed with early Brāhmī characters, showing that this temple was the work of Asoka himself. The excavations also revealed thousands of polished and unpolished pieces of Chunar sandstone, which had remained to prove the former existence on this site of two Asoka pillars.

The wholesale destruction to which this site was subjected was probably the work of the Hūnas in the fifth or sixth century A.D. Other portable antiquities besides those mentioned above included terra-cotta figurines of Yakshīs, numerous fragments of begging bowls of fine polished clay, which, like others of this early period found in Greece, had been repaired with fine copper rivets, a collection of ordinary saucer-shaped pottery lamps, with which the temple must have been illuminated on festive occasions, and other objects of daily use by Buddhist monks.

Another interesting site in the Jaipur State, which has been partially explored by the writer, is an ancient mound on the bank of a now dried up freshwater lake a few miles from the well-known salt lake of Sambhar. Sambhar was one of the principal cities of the Chauhān (Chāhamāna) kings of Ajmer and Delhi in the twelfth century. The earlier city, which lies buried in the mound referred to, must have perished at least three or four centuries before the

present city was founded. Some trial excavations were carried out on this site by Colonel T. H. Hendley in the year 1884, and a number of portable objects found by him are preserved in the Jaipur Museum. One of these objects is a pottery sealing with one large and six smaller facets, each representing a sacrificial post surrounded by a railing and inscribed with the name of a certain Imdraśarman in early Brāhmī characters. Colonel Hendley was in error in describing this as a Buddhist site. In reality, nothing of a Buddhist character was found either by him or in the course of the recent excavations.

This mound stands at a height of about forty feet above the level of the bed of the freshwater lake. The writer's excavations penetrated to a depth of about thirty-two feet and revealed the existence of three strata of buildings. The latest of these levels is assignable to about the eighth century A.D.; the next one, occurring at a depth of ten or twelve feet, to the early Gupta or late Kushāna period; and the lowest, about twenty feet below the surface, to the beginning of the Christian era. Remains of forty-five separate houses were found on the different levels mentioned above. They were all built of well-baked bricks of varying sizes on the usual Indian plan of a central open court surrounded by rows of cells on three or all four sides. The foundations are composed of layers of ashes or sand, alternating with roughly laid courses of bricks. To the late period belong copper coins of the late Indo-Sassanian period. The Gupta level yielded the left half of a pottery plaque showing a man playing on a lute, like Samudragupta on his coins of the Lyrist type; pottery tablets depicting subjects like the chariot of the Sun god; a splendid series of bowls of remarkably fine light clay decorated with elegant patterns; many well-shaped pottery vessels, including oval or hemispherical drinking bottles with the neck, handle, and spout so designed as to represent the River Ganges flowing from the matted

hair of Tryambaka Siva. The spout takes the shape of the river goddess pouring water from a vase. House IX yielded a circular copper coin of Huvishka, while small copper coins of early tribes were found in the lower levels.

From this lower level came interesting pottery plaques with two-armed figures of Ganesa, Agni and Siva in association with a coin of Antimachos Nikephoros (*circa* 130 B.C.), which rank among the earliest anthropomorphic representations of the deities in question.

Four punch-marked silver coins were also found on this site. A much more valuable addition to the known finds of such coins is a collection of 326 pieces of which the provenance is precisely known. The mound concerned is expected to yield other relics of great interest.

The uninterrupted continuity of Brahmanic institutions in Rajputana has been attested by early Brāhmī inscriptions mentioning Vedic sacrifices and by several sacrificial stone posts (*yūpas*) found in this area. Another pair of such monuments with Brāhmī inscriptions has been recently discovered in a large tank at the village of Barnala. They are dated respectively in the Krita or Mālava years 284 and 335.

An equally ancient site is that measuring about four square miles at Nagar in the territory of the Rao Raja of Uniara in the south of the Jaipur State. Mr. Carlleyle picked up on this site over 6,000 copper coins, which lay in some places 'as thick as sea-shells.' One hundred of this collection of coins are now preserved in the Indian Museum at Calcutta, and are believed, with the exception of a few, to have been minted at Nagar itself by the chiefs of a local Mālava tribe, which may not necessarily have been the same as the Mālavas of Dhar. These coins bear legends in Brāhmī characters of the second century B.C. to the fourth century A.D., and include some of the smallest and lightest coins to be found anywhere in the world.

To the Gupta period belongs a mound on a hill known as Bundhwali Dungri near the village of Moroli in the Sikrai tahsil of the Jaipur State. Here a hoard of well-preserved gold coins was found a few years ago and identified as those of Samudragupta and Chandragupta II. The site does not appear to have been visited by any archæologist and requires special attention.

The town of Lalsot, fifty-eight miles from the city of Jaipur, possessed an ancient Buddhist stupa of considerable antiquity. Six red stone pillars belonging to the railing of this monument have in modern times been utilized in the construction of a *chhattris* or cenotaph. These pillars are five feet high, square at the base and at the top, and octagonal in the middle portion. The central medallion on one of these pillars depicts a Buddhist gateway in front of a stupa crowned by an umbrella and surrounded by a railing.

Exploration of other ancient sites will no doubt bring to light numerous monuments of ancient date. At present, besides those revealed by the excavations at Bairat and Sambhar, the earliest monument is the ruined temple of Harshanātha-Siva on the Harasnath Hill near Sikar. In an inscription of the tenth century A.D. this monument is described as possessing a spacious *mandapa* (pillared hall) fronted by a *toraṇa* (gateway). A subsidiary structure on one side of this temple contained colossal statues of the Pāndava brothers and Draupadī, and these statues and other sculptures have been brought down and exhibited in a museum at Sikar. Another temple, which was nearly coeval with the one referred to, was the temple at Chatsu of Murāri (Vishnu), which according to an inscription now in the Jaipur Museum was constructed by a Guhila Prince named Bālāditya. This temple has long since disappeared; but the remains of another temple of about the eleventh century A.D., which was dedicated to Siva, have sur-

vived beneath a later temple of Chaturbhuja, which was constructed in 1620 A.D. during the reign of Maharaja Man Singhji. Two interesting pillars, found in a Jain temple on the top of the hill known as Dungri, are adorned with labelled figures of the first ninety-five Jain pontiffs beginning with Bhadrabāhu.

The town of Amber dates from before the tenth century A.D. A few of the pillars used in the construction of a temple of the Sun date from this period and a short inscription of Vikrama Samvat year 1011 (955 A.D.) has survived on one of them. An interesting stone inscription of the Vikrama Samvat year 1714, which was removed from a Jain temple, designates this city as Ambāvatī which was adorned with step wells, tanks and beautiful gardens replete with fruit-bearing trees, noblemen's mansions and temples with golden finials. The famous palaces in white marble on the summit of the hill on the west of the valley which encloses the city of Amber are built in excellent Saracenic style. The earliest among these palaces is the work of Maharaja Man Singhji I; the others were added by Mirza Raja Jai Singhji I and Maharaja Sawai Jai Singhji II, who transferred his capital to the present site. Other monuments at Amber include the temple of Kalyan Raiji, adorned with figures in high relief, which, according to an inscription found on the doorway of the sanctum, was built in the reign of Bhagavatdas, father of Maharaja Man Singhji I; and a fine white marble gateway constructed in the Samvat year 1702, as a swing (*dola*) in honour of Krishna, by the mother of Maharaja Jai Singhji I (Samvat 1678-1724). A group of fine *chhattrīs* or cenotaphs of the past kings of Jaipur is now receiving attention.

An interesting temple in typical Indo-Aryan style and in an almost perfect state of preservation was discovered by Mr. Carlleyle at Bisalpur. An inscription dated in Vikrama Samvat year 1244 in the reign of the celebrated Chāhamāna king Prithvīrāja (III) of

Sambhar, Ajmer and Delhi, designates the temple as that of Gokarna.

Numerous inscriptions pertaining to the reign of the Kachhwaha rulers have been collected, and will be published in a separate volume.

DAYA RAM SAHNI.

(*h*) BHOPAL, NAGOD, MAYURBHANJ

(i) BHOPAL: SANCHI STUPA

Where the G.I.P. railway and the Betwa river cross the boundary between the States of Gwalior and Bhopal are the ruins of Besnagar (Vidisā) near Bhilsa on the Gwalior side, and the groups of Buddhist monuments in and near Sanchi on the Bhopal side, the latter having been named the Bhilsa Topes by General Cunningham.

The most important among the five groups of the Bhopal Buddhist Stupas is the one at Sanchi-Kanakhera. The story of the exploration, exploitation, and restoration of these monuments at Sanchi is a long one, covering a century from 1819 to 1919 (see also Buddhist Monuments, Chapter III [*b*]). These stupas were discovered and first described by Captain Fell in a note dated 'Hasingabad (Hoshangabad) Jan. 31st, 1819,' published in the *Calcutta Journal* of July 11th, 1819, and reprinted by James Prinsep in the *J.A.S.B.* (III, 1834, 490-494). Fell found the dome and the berm of the Great Stupa almost intact, and the great ground rail and three (northern, western and eastern) out of the four magnificent gateways still standing. He could not recognize the ruins of the smaller stupa to the north-east; but he discovered another stupa lower down in the north on a terrace of the hill. The dome with the berm of this stupa was 'in perfect repair, not a stone having fallen,' and the ground rail standing. Fell suspected that the huge dome

of the Great Stupa was supported by internal pillars, and so 'apartments undoubtedly exist within, worthy of being examined.' This led Mr. Maddock, Political Agent at Bhopal, and Captain Johnson, his assistant, to excavate the first and second stupas in 1822, when the whole solid brickwork was found 'without any appearance of recess or open space of any kind' (*J.A.S.B.*, IV, 1835, 712).

Lieutenant F. C. Maisey, who had been employed by the Government of India to carry on special archæological work in the Upper Betwa districts of Central India, prepared in 1849 an illustrated report on the stupas at Sanchi, their sculptures and inscriptions. Major (afterwards General Sir) Alexander Cunningham joined Captain Maisey at Sanchi in 1851. They sank perpendicular shafts down the middle, not only of one of the three big stupas at Sanchi, but also of fifty other stupas at Sonari, Satdhara, Pipaliya (Bhojpur) and Andher for recovering relics enshrined therein.

Before 1851 the western gateway had also fallen. In the preface to *The Bhilsa Topes* (1854) Cunningham wrote: 'I would also venture to recommend that the two fallen gateways of the Sanchi Tope should be removed to the British Museum, where they would form the most striking objects in a hall of Indian antiquities.' Cunningham also added that 'their removal to England would ensure their preservation.' Evidently encouraged by this suggestion, Napoleon III requested H.H. the Begum of Bhopal to present one of the Sanchi gateways to be erected in Paris in 1868. The Government of India did not approve the removal of any portion of the Sanchi remains, but deputed Lieutenant H. H. Cole, Superintendent, Archæological Survey, North-Western Provinces, to prepare plaster casts of one of the gateways. Full-size plaster casts of the eastern gateway are now exhibited in Paris, London, and Edinburgh.

Early in 1880 the Political Agent of Bhopal recommended the clearance of the vegetation at Sanchi and the erection of the fallen

are not carved. When the ground rail of Stupa II was erected, the idea of decorating the railing in imitation of the wall paintings occurred to the patrons, and the painters were evidently given chisels to decorate the stones. The groups of figures and flowers that are carved on the pillars of this railing are characterized by balance and unity, and there is movement in the flowers and the scroll-works. But the figures themselves are very crude. This crudeness is evidently due to the decorator's lack of experience in handling the chisel. Later on, when the gateways of the Great Stupa were being carved, a beginning was made to remove this defect in the decorative sculptures of the ground rail of Stupa II. We find two of the pillars of the eastern entrance of the ground rail recarved and redecorated with figure sculptures of superior artistic quality. Even when the left pillar of the south gateway of the Great Stupa was being decorated, the carving, according to the inscription above, was done by the workers in ivory of Vidisā.

The gateways of Sanchi show an all-round progress of decorative sculpture following a long course of development as compared to the sculptures of Bharhut, which are described below.

The well-balanced compositions together represent the harmonious unity that the Buddhist worship establishes among all creatures, including man. They visualize the Buddhist conception of universal brotherhood that is not confined to man, but includes all creatures liable to birth, death and rebirth.

Bhopal has its own Department of Archæology, the present Superintendent of Archæology being Mr. Muhammad Hamid.

(ii) Nagod: Bharhut Stupa

Nagod is a state in Central India, small in area (about 501 square miles), but rich in antiquarian remains. The remains of the

old town at Kho had yielded several copper-plate inscriptions of the Gupta period before Cunningham visited the State in 1873 and discovered the great ground railing of the Buddhist Stupa at Bharhut. In 1920 Rakhal Das Banerji discovered the remains of a fine Gupta temple at Bhumara (MASI, 16). But the railing of Bharhut is historically and artistically one of the most important monuments of antiquity discovered in India (see also Buddhist Monuments, Chapter III [*b*]).

Bharhut is a small village nine miles south of Satna on the Allahabad-Jubbulpore railway line. At the northen end of the village is an ancient site now known as *Kannu Makhar Ke Akhar*, or, briefly, *Makhraha*. A colossal seated image of the Buddha of red sandstone, assignable to the tenth or eleventh century A.D., is worshipped by the Hindus as the image of a sadhu, Kannu Makhar. Here Cunningham discovered in 1873 the remains of an ancient Buddhist stupa and its ground railing. At that time a large flat-topped mound, with the ruins of a small Buddhist cell and three pillars of a Buddhist railing with three connecting rails or bars of stone, and a coping stone covering them, besides a single gateway pillar which once supported the ornamental arch of the entrance, were visible. The three pillars were more than half-buried in the ground. Subsequent excavations at the site carried on by Cunningham and searches in the neighbourhood brought to light many more pillars, cross-bars and coping stones of the railing and fragments of the lintels and other pieces of the gateways. According to Cunningham the original railing consisted of 80 pillars, 228 cross-bars and a coping measuring 330 feet in length. He recovered about two-fifths of these materials, and in 1876 induced the Raja of Nagod to make a presentation of them to the Indian Museum, Calcutta.

The Stupa of Bharhut, like other stupas of the Maurya period,

was made of bricks. The railing and the gateway may be assigned to the second half of the second century B.C., somewhat later than the ground rail of the Great Stupa of Sanchi, and about three-quarters of a century earlier than the gateways of the same stupa.

This great ground rail of Bharhut is almost completely sculptured. An undulating creeper issuing from the mouth of a kneeling elephant and full of movement throughout runs over both sides of the coping stone. On the outer side, in every loop of the creeper, there is a full-blown lotus. On the inside, bas-reliefs illustrating Jātaka stories (events in the pre-births and the last birth of Gautama Buddha) alternate with representations of fruits, flowers, garlands, jewellery, and holy symbols. The bunches of mango are fine specimens of still life. There is unity, solidity, and movement in the composition. Bas-reliefs illustrating the legendary history of the different births of Gautama Buddha occur, not only on the inner side of the coping, but also on the pillars and the cross-bars of the railing. Some of these bear inscriptions giving the subject-matter of the scenes. According to the doctrine of transmigration of the soul, which is the basis of Buddhism, every being is liable to be repeatedly reborn, not only as man, but also as a lower animal. So a feeling of kinship with the animal kingdom is deeply rooted in the Indian mind. In course of his multitudinous rebirths, Gautama Buddha was born as man and as animals such as an elephant, a deer, a monkey, and so forth. Among the bas-reliefs of Bharhut there are some scenes in which animals figure prominently, and in others men monopolize the stage. Artistically the former class of scenes are definitely superior to the latter. The elephants, monkeys, deer and other animals are carved true to life. The poses and gestures of all these animals are characterized by individuality and movement. The composition is well balanced. Some of the scenes are humorous. Others strike a more serious note—elephants,

deer and lions engaged in worshipping a holy tree or a holy terrace. In a compartment of the coping stone labelled 'the holy tree that perfectly gladdens the heart of the deer,' two lions and six deer are calmly lying down, sitting or standing round a holy tree with an empty throne below, the former forgetful of their thirst for blood and the latter of their fear. The bas-relief shows these wild animals attuned to the same emotional key. The majority of bas-reliefs consist of human figures. These are disappointing as works of art. The figures are crude, conventional and lifeless. The contrast between the human figures and the monkeys as carved by the craftsmen of Bharhut is best exemplified in a bas-relief in the medallion of a rail pillar, wherein the Buddha, born as a monkey prince, serves as a bridge to enable his followers to cross over to safety, and has his backbone broken by an enemy while performing his noble task. But exceptions are not wanting. Scenes showing heavenly nymphs playing on musical instruments and dancing to their accompaniment are full of movement.

The narrative and illustrative bas-reliefs of Bharhut are linear in pattern, though in some of the animal figures volume is clearly expressed. But on some of the rail pillars there are nearly life-size male and female figures in high relief. These are also crude and lifeless; though in high relief, there is no co-ordination of the planes in them. But even here there are exceptions. These are the female figures standing with the left arm and leg passing round the trunk of a *sal* (*Shorea robusta*) tree and breaking a branch with the right hand. This disparity between the types of figure indicates that the Indian sculptors of the period were more accustomed to carve female figures in relief breaking the branch of the *sal* tree, than other types of figures. To the same cause may be attributed the better execution of the figures of animals than of man in the bas-reliefs. In the better type of female figures we recognize the

roundness and smoothness of all the members and limbs of the body that henceforward characterize all human figures carved and painted by the Indian artists. In Indian astrology roundness and smoothness are recognized as auspicious marks, and in art as marks of beauty, and as such are included among the thirty-two marks of the superman according to the Buddhist canon. (Chanda, *Medieval Sculptures in the British Museum*, London, 1936, pp. 13-16.)

(iii) Mayurbhanj: Khiching Temples

Mayurbhanj is one of the Indian States in the hill tracts to the west of Orissa. In view of the rugged nature of the country and the backward state of an overwhelming majority of the population belonging to the aboriginal stock, the State may be said to be rich in antiquarian remains. The most important of the remains are found around a small village called Khiching at the south-west of the State, near the boundaries of the British district of Singhbhum and the Indian State of Keonjhar. Khiching was visited by J. D. Beglar of the Archæological Survey in 1875. In his account of Khiching (Kichang) in the Report (Vol. XIII) he rightly pointed out that the great group of temples near the village is of the 'greatest interest and antiquity.' In 1923-24 the present writer cleared the site of jungle and excavated the mounds.

The main object of worship in this village is an image of Chamundā or Kālī, called Kinchakesvarī. In deeds of gift granted to the officers of the temple by the Maharajas of Mayurbhanj in the eighteenth century the goddess is called Khijjingesvarī. She is the patron-goddess of the ruling house of Mayurbhanj. Khiching or Khijjing was the capital of Mayurbhanj till one of the ancestors of the present ruler of Mayurbhanj occupied the district beyond the hills to the east and transferred his residence to Hariharpur, from

which place early in the nineteenth century it was removed to the present capital, Baripada.

From copper-plate grants dating from the eleventh and twelfth centuries, and from an inscription on the pedestal of an image of the Bodhisattva Avalokitesvara of about the same age, we learn that the kings Rāyabhanja, Ranabhanja and Rājabhanja ruled from Khijjinga-Kotta, the modern Khiching. The oldest temples resembled in style the temples of Bhuvanesvar, dating from the tenth and eleventh centuries. The sculptures that decorate the later mediæval temples of Orissa are conventional in type and more or less stiff. But the great image of Siva with attendants that was enshrined in, and the life-size images of gods and goddesses and of females in different postures that decorated, the largest of the temples in the group within the compound of the modern temple of Kinchakesvari are of a different type. Though, like all Indian figure sculptures, they are characterized by auspicious marks like rounded and smooth limbs, yet the conventional type is modified and enlivened by the artist's observation of life and individual taste. These sculptures remind one more of the sculptures of the Gupta period than the contemporary later mediæval sculptures of Eastern India. It is evidently for this reason that Beglar was disposed to ascribe the finest and earliest sculptures of Khiching to the reign of Sasānka (early seventh century A.D.).

Another feature of the remains of Khiching also deserves the attention of the students of Indian archæology and art. The rulers of Mayurbhanj went on building temples within the same compound till they abandoned the place. So here it is possible to follow the decline of Northern Indian architecture and sculpture from the eleventh to the sixteenth century, stage by stage. The present ruler of Mayurbhanj, Maharaja Sir Pratap Chandra Bhanja Deo, K.C.I.E., has erected a small museum near the site for the exhibition of

the sculptures, and is utilizing the carved architectural pieces for decorating a new temple of Kinchakesvarī.

Antiquities collected from other parts of the State and a number of copper-plate grants are deposited in the museum at Baripada. These ancient monuments and the museums are under the charge of the Archæological Department of the State, which was constituted in the year 1924, but which was administered up till the end of 1930 under the guidance of the Archæological Survey of India. Mr. Paramananda Acharya, B.Sc., is now the head of the Archæological Department of the Mayurbhanj State.

RAMAPRASAD CHANDA.

NOTES TO CHAPTER VII (*d*)

[1] See also, for Pre-Muhammadan Monuments of Kashmir, *An. Rep.*, A.S.I., 1915-16, pp. 49-73, Plates 35-47. See, for Excavations at Avantipura, *An. Rep.*, A.S.I., 1913-14, pp. 40-60, Plates 25-30, and figure (1).

[2] *Note by Editor.*—The reconstruction of the Jāmi Masjid in Srinagar was performed by the Indian Archæological Department in 1923 under the supervision of the Director-General.

The Jāmi Masjid is the most imposing of all the monuments of Kashmir in the 'wooden style.' Founded by Sikandar Butshikan (1390-1414) and extended by his son Zain-ul-Ābidīn, it was thrice burnt down and thrice rebuilt—once in 1479, a second time in 1620, and a third time in 1674. The original design, however, seems to have been repeated by successive restorers, and though little of the original fabric is left, the mosque is still an instructive specimen of pre-Mughal architecture. Its plan is the orthodox one: a rectangular court closed by colonnades on its four sides, with a spacious hall in the middle of each—the hall on the west, which is the largest, constituting the prayer-chamber, and the other three serving, as usual, for entrance gateways. The outer wall and the arched screen surrounding the courtyard were of brick or brick and stone combined, but all the rest was of wood. Supporting the roofs of the halls and colonnades were 360 columns of deodar wood, the tallest of which—in the halls—are nearly fifty feet in height, with their shafts hewn from single logs.

Over each of the four halls was a magnificent spire, also constructed of deodar wood, the tallest of which (over the prayer-chamber) rises to a height of 155 feet from the ground. The roof—carried on ponderous piers of logs piled up horizontally—was covered with birch-bark, turf and flowers. Since its third rebuilding in 1674 nothing whatever seems to have been done to keep the mosque in repair, and it can well be imagined into what an irreparable state of decay it had sunk after two centuries of neglect. As a fact, it was found necessary to rebuild three-quarters of the masonry walls and to renew the greater part of the woodwork, including a large number of the deodar columns. For this purpose special bricks of the requisite size and fabric had to be made, and the forests of Kashmir to be ransacked for deodar trees large enough to provide the great columns in the four halls.

The work of restoration was financed by a special cess levied by the State on the Muslim population of Kashmir, and was carried out by Mr. L. Avery, under the control of Colonel H. A. D. Fraser, R.E., C.B., then Chief Engineer of Kashmir, both of whom for several years devoted infinite thought and care to the undertaking. A specially difficult part of their task was the fitting up of a lathe large and powerful enough to turn the great deodar pillars referred to above. How well they succeeded and how accurately the turning was done may be judged from the fact that when these forty-five-foot shafts were raised up on their stone bases they stood alone, without any support!

(See the *A.S.I. Report* for 1906-07, Plates LXII-LXXII.)

CHAPTER VIII

BURMA

(i) *Conservation.*—Archæology in Burma is relatively young; much younger than in India. In 1855 Colonel H. Yule was appointed secretary to Major (later Sir Arthur) Phayre, and accompanied him on his mission to the Court of Ava, sent by Lord Dalhousie, then Governor-General of India. In the narrative of the mission Colonel Yule included some brief but interesting notes on the remains at Pagan and the monuments of Ava and Amarapura.[1] About forty years later, Major (later Sir Richard) Temple made a tour of the principal places in Lower Burma, the result of which was an interesting short account of the antiquities that came under his notice.[2] The first archæologist officially appointed was E. Forchhammer, who combined with this appointment the professorship of Pali at Rangoon College. But he confined his energies mainly to taking impressions of the numerous inscriptions scattered over Upper Burma; these were edited after his death and form several volumes. He died prematurely in 1890, when his appointment remained vacant, and it was only in 1899 that the establishment of an Archæological Department properly so called was sanctioned, with Mr. Taw Sein Ko as its first incumbent. At first the work was confined to preparing lists of monuments; and archæological work in its several branches really began some years later.

Though Burma is surrounded by India, Tibet, China, Siam and the Malay States, the culture of its people, their art and monuments are almost exclusively derived from India. The Eastern Maritime

Provinces—Thaton and Prome—were colonized from south-eastern India early in our era, during the second or third century and probably somewhat earlier; but nothing as yet has been found antedating the fifth-sixth centuries. The culture thus imported was confined to the capitals of the several states and to a few secondary towns; the result is that archæological centres in Burma are few, and the religious monuments which, at one time, must have been numerous have—except in Pagan—practically disappeared, leaving only shapeless mounds of earth and bricks, owing on the one hand to the destructive climate of the deltaic region, and on the other to almost perpetual wars. Hence the only real archæological centres are: Prome, somewhat rich in important finds but poor in monuments; Pagan, much younger, but crowded with wonderful temples, which the climate of the dry zone has fortunately preserved without too great deterioration; and then Mandalay, the youngest, just in its eightieth year, with its quaint wooden architecture. As far as conservation is concerned, the work of the Archæological Department was concentrated mainly at Mandalay and Pagan, principally the latter. Other places, owing to the paucity of monuments worth preserving, did not offer a great scope for the work of conservation, and monuments there preserved have more of a historical than an architectural interest. After the fall of Pagan at the hands of Kublai Khan's warriors in 1286, over half a dozen capitals of more or less importance were founded in Upper Burma; but with the fall of the great capital the art of building received a set-back, from which the nation is just beginning to recover. Most of the monuments are poor imitations of those at Pagan and lack their grandeur and breadth of conception; and owing to inferior workmanship the majority had long been in a serious state of disrepair. Only a few were thought worth preserving, but mostly on historical grounds. Such is the case, for instance, at Mekkhaya, Ava, Sagaing and

Amarapura. To these may be added the crumbled walls of a few old capitals and cities.

Mandalay is the last capital of the Burmese Empire. It was founded by Mindon, the last king but one before Upper Burma was annexed by the British in 1885. Its monuments, therefore, are quite recent, and would be of little value from the archæological point of view were it not that they are among the last and best specimens of a wooden architecture which is fast disappearing. Excepting a few masonry pagodas and temples of no architectural interest, it may be said that the sole interest of this young city lies in its wooden structures, which in their large lines can be seen in Nepal, Siam, China and Japan. These beautiful buildings, with their multiple receding roofs surmounted by many-tiered spires, the glittering gold on the walls and their wealth of delicate sculptures, are splendid specimens of Burmese taste and genius. They consist of the palace in the centre of the city, and the forty-eight bastions on the city walls and several monasteries now still occupied by Buddhist monks. The palace is naturally the most important, being the last representative of similar palaces that once existed in many capital cities.[3] Owing to the material—teak wood—of which it is built, the palace has for over thirty years required much attention and care and the expenditure of comparatively large sums, and will continue to require attention in the future. Rot has set in at the core of the numerous magnificent columns which support the high roofs of the apartments, and has spread over the carvings and other parts of the buildings. This has necessitated the substitution of new posts and the renewal of the carvings and parts of flooring boards. The beautiful multiple-roof and spire over the principal throne room had to be reconstructed in 1906. In the not far distant future the palace will be only the shadow of its original self, every part having been renewed. And yet it is well worth all the trouble and

expense if we are to preserve this only example of Burmese civil architecture, which to the people is the embodiment of long centuries of national grandeur and cherished traditions and usages. The bastions over the walls of the city are also fast rotting away; they require constant repair and a rather large expenditure of money. But they are a distinctive feature of Mandalay and unique in the country. The seven monasteries which formerly were also maintained at the public expense are even more beautiful than the palace (as it now is) and the bastions. Much care was bestowed on their preservation for many years, but they had finally to be struck off the list of conserved monuments owing to the always imminent danger of fire. This elegant wooden architecture is fated to disappear in the near future from the face of Burma; these monasteries, as they crumble down, are being replaced generally by ugly masonry buildings.

Pagan, the capital of the Burmese people,[4] was founded in 849 A.D. In 1056-57 Burmese armies, marching down south, conquered Prome and Thaton; from the latter they received the Hīnayāna Buddhism which they still profess, their alphabet, their culture and their art. It was from that date that the extraordinary architectural activity began which covered the city and its vicinity with innumerable stupas and temples; many of these were demolished to fortify the city against Kublai Khan's army in 1286, when the city fell and ceased to be the capital of Burma. There are still about 800 remaining; they cover a large area, about eight miles in length and four or five miles in width. After a careful survey a large number among the best preserved were divided into two categories: the greater number were listed as worth protecting against the activities of treasure-hunters; and forty-three among the very best classed for conservation. The latter may be divided into two principal groups: first, stupas—that is, pagodas consisting of a more

or less elongated bell-shaped dome, surmounted by a ringed spire, crowned by a *hti* ('umbrella' capital), the whole resting on a series of receding terraces, usually three or five in number, a beautiful example of which is the Mangalazedi pagoda. The other group consists of temples properly so called; they are rectangular in plan, some only one storey high, with a porch forming the entrance; over the sanctuary, raised on the terraces, rises a *śikhara* (spire). Others consist of an enormous central brick pile, round which one or two walls are built, forming one or two corridors running around the pile; of these, some have two or three or more sanctuaries superposed, each diminishing in size, from the topmost of which rises the spire; splendid examples are the Gawdawpalin and the Thatpyinnyu. This massive architecture, which seems to be peculiar to Pagan, was most probably derived from Bengal.[5] Out of these forty-three monuments, forty-one have been thoroughly repaired and work at another has begun. They were found in all stages of decay, and what preserved them, in most cases, from utter ruin was, besides the dry climate, the enormous thickness of the walls in which the flights of steps ascending from storey to storey were built. The equilateral arches supporting the superincumbent weight of the enormous walls were often found to be a source of imminent danger when they had wholly or in part crumbled down. The work was not one of reconstruction, but merely of conservation, rebuilding only such parts, mostly battlements, of which numerous original models were at hand; and endeavouring always by means of tinted cement or plaster to merge the new work with the old so as to make them barely distinguishable.

At Old Prome, if we are to judge from the numerous mounds of ruins covering a very large area, the monuments, much older than those at Pagan, must have also been very numerous. Only a few remain, ranging from the fifth-sixth to the ninth or tenth centuries.

Out of these, three have been conserved. The Bawbawgyi is a majestic elongated stupa, which in shape is like a sugar-loaf, recalling the ancient and somewhat similar stupas in India; this rests on five terraces. The two others, the Bèbè and Lemyethna, of small proportions, are temples, which by their style bring to mind similar ones in Pagan.

As has been already said, culture and art were concentrated at a few definite points, Thaton, Prome and Pagan; these are the old capitals, where religious life was intense, and its consequent building activity resulted in numerous monuments. But those at Thaton—at least those that might have been worth preserving—have unfortunately disappeared; so at Prome, where at least a few are still to be seen; and this leaves Pagan alone as an ancient centre. At the half-dozen or so younger capitals, where no doubt religious activity was no less intense, architectural genius and building ability were mostly of a secondary order, and although monuments appeared in a bountiful crop, very few were found worthy of conservation, excepting the beautiful wooden monuments at Mandalay.

(ii) *Excavation and Exploration.*—Excavating operations in Burma are inconsiderable when compared with those in India. The reason for this is found in the very nature of the sites themselves. These consist, as at Prome, for instance, of a large number of mounds of moderate size which mark the sites whereon temples, stupas or monasteries once stood, and of monuments, as revealed by what remains of their foundations when uncovered; few only were large and important. On that account excavation in Burma has generally been confined to opening up a multiplicity of such small mounds. The remains are often in such a state of decay that the course of the foundations can barely be traced. However, from time to time they have yielded numerous finds, some of which have

proved important for the elucidation of the history of the political, religious and artistic history of Burma.

The extraordinary paucity of ancient monuments at Thaton and its vicinity has already been pointed out.[6] Tradition has it that the old original site, which was some miles to the west of the younger city of the same name, has disappeared owing to the encroachment of the sea. Whatever the cause may be, the fact remains that Thaton and its district and the Pegu district to the north-west are singularly deficient in ancient remains of archæological interest antedating the eleventh century. The first serious visit to Thaton in search of antiquities was that made by R. C. Temple in 1894. He mentions finding three large stone sculptures representing the Hindu trinity, Brahmā, Vishnu and Siva, seated on lotuses issuing from the navel of Nārāyana resting on the serpent Ananta.[7] This is an important find, showing that, in this reputed seat of Pali Hīnayānism, Hinduism was also flourishing. These stone sculptures may be assigned to the ninth or tenth century.

At Pegu or Hamsāvatī, which was founded in the early ninth century, ancient antiquarian remains antedating the eleventh century—from which date detailed and reliable history begins—are, as mentioned above, very scarce. But finds of objects belonging to a later date have been made which are interesting and important. In the course of two visits to Pegu in 1913 and 1914, I recovered from two ruined pagodas, the Shwegugyi and the Ajapāla, 167 terra-cotta plaques beautifully glazed in green, white, red and chocolate; one series represents the warriors of Māra assaulting the Buddha, and another, his daughters tempting him; 86 of these plaques are inscribed in Mon of the period, the last quarter of the fifteenth century. In the cold season of 1914, Mr. (now Dr.) J. A. Stewart, I.C.S., deputed by this Department, made an archæological exploration of Pegu and the vicinity, during which he found, while

digging on a site traditionally known as the temple of Ganesa, two large stones which are no doubt *yonis*. It was evident that the site had been dug into previously, probably for stone, and this may explain the absence of *lingas*; there were also found mutilated figures of Hindu deities which cannot be identified. It is impossible to fix exactly the dates of these finds, but they may go back to the tenth or eleventh century, with a margin on both sides.[8]

During the short explorations made at various times there were discovered a number of inscriptions in Mon valuable to the philologist and historian, and also the Kalyāni inscriptions, in Pali and Mon, most important for the ecclesiastical and political history of Burma[9] (fifteenth century).

Mention has already been made of the Hinduization of Old Prome very early in the Christian era. The Hindu colonizers, who gave the aborigines their culture and art, left a deep impress, proved by a great many, not to say most, of the discoveries made there. The finds at Old Prome consist mainly of votive tablets, stone sculptures and inscribed plates of gold and silver. They have enabled us to establish the fact that three religions flourished there, living peaceably side by side: Hīnayānism, Mahāyānism and Hinduism. Evidence tends to show that the Pali Hīnayāna was, though not perhaps with regular continuity, in the ascendant, and professed by the majority of the inhabitants—that is, the Pyu—the others being professed by smaller communities who came from Southern and Northern India. Stone sculptures were very much more numerous than they are at present, but a large number were ignorantly destroyed by contractors when the Rangoon-Prome railway line, which passes right through the old city, was built in the seventies of last century; they were broken up and used as ballast, and so lost for ever to us.

Before the two visits of General L. de Beylié to Burma during

the cold season of 1905-06, and some two years later,[10] Prome was visited only spasmodically and no serious exploration was carried out, although several important finds had been made. But the fortunate discoveries of the French archæologist seem to have drawn a keener attention to the extensive field; for Prome is, indeed, the place wherein not only numerous but the most ancient finds have been made, which throw a really fresh light into the darkness which surrounded the condition of this country in the early centuries of our era. Among those of greater importance mention must be made of the two gold plates found at a locality called Maunggan in 1897, and a stone in three fragments, but giving a continuous text, discovered somewhere later. The characters belong to the ancient Kanara-Telugu script, and very closely reproduce the letters of the Kadambas[11] with some slight differences; this is what has come to be called the Pyu script. They are inscribed with texts from the Pali Canon; they are ascribed to the sixth century and probably somewhat earlier. I found, in 1926, a manuscript of twenty gold leaves, inscribed with the same characters, and belonging to the same date, containing also excerpts from the Pali scriptures. These documents attest the existence at Prome at that time, and no doubt earlier, of the Theravāda School. Votive tablets are exceedingly numerous at Prome. A good number of them are interesting; they often represent the Buddha flanked by two Bodhisattvas, Avalokitesvara and Maitreya, and bear an inscription in Devanagari characters, the famous formula: 'Ye dharmā hetuprabhavā . . .' (of all phenomena sprung from a cause, the Buddha has explained the cause), and thus testify to the existence of Mahāyānism; so do also several other finds—for instance, a bronze statuette of Avalokitesvara with four arms, which has been assigned to the sixth-eighth centuries A.D. Others represent the Buddha without Bodhisattvas; below the throne is a line of an inscription, which contains the

same formula, but in Pali, "Ye dhammā . . ." On similar tablets the same legend, but in Sanskrit, appears, and these probably belong to a Hīnayāna School with a Sanskrit Canon. In 1927-28 there was discovered a large stone statue of the Buddha, around the square pedestal of which is a long Sanskrit inscription in Gupta characters of the seventh-eighth centuries, with intermixed Pyu writing which seems to be a word-for-word translation of the former. Vishnuism is represented by a stone bas-relief and a stone sculpture of Vishnu, with four arms, standing on Garuda, and another sculpture showing the trinity Brahmā, Vishnu and Siva, seated on lotuses issuing from the navel of Nārāyana resting on Ananta. Several funeral urns were discovered in what appears to have been a vault reserved as a burial place for a royal family. They bear short inscriptions in the Pyu language, which have been provisionally dated 673 A.D. to 718 A.D. They mention by name three kings who seem to have ruled in Prome in lineal succession.[12]

Excavations and exploration at Pagan have brought to light an abundant harvest of finds which, though not so old as those of Old Prome, are nevertheless important for the history of religion and art in Upper Burma. Burmese historians affirm that Buddhism did not exist at Pagan before the eleventh century, but that only means that the Hīnayāna with the Pali Canon was not professed there. Before that date, the religion of Pagan had been that of the Ari, a medley of Burmese superstitions, Mahāyānism, Tantraism and Hinduism. There is evidence also of a Hīnayāna sect with a Sanskrit Canon. All the finds belonging to the second half of the eleventh and most of the twelfth centuries point to an intense influence from India and especially Bengal; the practised hand of the Indian is seen in all sculptures and paintings of that period. Here, as in Prome, votive tablets are astonishingly numerous, of which a large number were brought over from India by Burmese and Indian

pilgrims. Most of them bear, in North Indian characters, the usual formula—"Ye dharmā"—and the Buddhist trinity Buddha, Avalokitesvara and Maitreya. Some have the same formula in Pali written in Burmese letters of the time; others bear inscriptions in the same characters or in Nagari, in which appears the name of Aniruddha, the then reigning king. A few, the most interesting, have a bi-lingual inscription, Sanskrit and Pali, in which the same name appears, and some are in Mon and even in Pyu; the principal interest of these tablets lies in the kaleidoscopic view they give of the influences centred in Pagan. Stone images of Buddha, either in the round or in bas-relief, are almost countless; but the great majority seem to have been made in series for the ornamentation of the temples, and do not evince any high degree of artistry. There is nothing in Pagan which can be compared with the beautiful sculptures of India. Bronze figures, which are much less in number, generally show a far better technique; but then a good number of them have been imported from India. In bronze, besides the Buddha, are images of Bodhisattvas, one or two Tārās, Vishnu, and Ganesa. Vishnuism is represented by a few images of the god on Garuda. Terra-cotta plaques, glazed and unglazed and illustrating the Jātakas or previous lives of the Buddha, are also plentiful. The best are to be found at the Petleik pagoda—these are the very best, exquisitely modelled—and at the Ānanda temple, where the glaze has probably obliterated the details. The mural paintings on the inner walls of numerous temples are mostly beautiful and well executed; the painters were artists from Bengal and Nepal, and the frescoes are good specimens of the Varendra School. They are important in that most of them actually illustrate the medley of religions existing in Pagan during the few centuries preceding the eleventh. They form a pantheon of Mahāyānism, with its numerous Bodhisattvas, Saktis and Tārās; Tantraism with its

distorted and hideous monsters; Hinduism with its three principal gods, and Indra, Ganesa, etc.; all mixed with scenes of Hīnayānistic character, and often covering the walls of one temple, as is the case of the Abèyadana.

Exploration at other places has brought to light many finds, but they belong to a later period than Pagan, when the arts in Burma were decadent and generally imitations of those of the Pagan period, and as such do not call for any special mention.

CHAS. DUROISELLE.

NOTES TO CHAPTER VIII

1 *Narrative of the Mission sent by the Governor-General of India to the Court of Ava in* 1855 (London, Smith, Elder and Co., 1858). Sir A. Phayre wrote a *History of Burma,* in which are interspersed valuable notes on archæology (Trübner and Co., 1883).

2 'Notes on the Antiquities of Ramannadesa (the Talaing country of Burma), *Indian Antiquary,* 1894.

3 For a full description of the palace see my *Guide to the Mandalay Palace* (Government Printing Press, Rangoon, 1925).

4 Prome was the capital of the Pyu, who have long disappeared, and Thaton that of the Mon, more commonly known as Talaings.

5 *V.* Chas. Duroiselle's *The Ananda Temple at Pagan,* Memoirs of the Archæological Survey of India, No. 56.

6 *V. supra.*

7 *Op. cit.,* pp. 31-33.

8 *V.* 'Excavation and Exploration in Pegu,' J. A. Stewart, I.C.S., *Journal of the Burma Research Society,* Vol. VII, Part I, pp. 13 ff.

9 *V. Epigraphia Birmanica.* The Mon part translated by C. O. Blagden. Dr. Blagden was the first to call the attention of the Government of Burma to the importance of the inscriptions in old and mediæval Mon, and he has edited and translated them with scholarly accuracy.

[10] *V. Architecture Hindoue en Extrême-Orient* (Leroux, Paris, 1907), and 'Prome et Samara.'

[11] *V.* Finot, 'Un nouveau document sur le bouddhisme birman,' *Journal Asiatique,* Juillet-Août, 1912, pp. 121 ff.

[12] *V.* C. O. Blagden's 'The Pyū Inscriptions,' *Journal, Burma Research Society,* April, 1917, pp. 37 ff.

CHAPTER IX

INDIA AND THE TOURIST

To visit all the monuments which the activities of archæologists have conserved or restored, or the museums in which formerly buried objects have been stored, must mean a great deal of travelling and an expenditure of time in a country of great distances. Travelling is facilitated by a railway system which has thrown a net over the country, but in parts the meshes of the net are rather wide, and a motor vehicle becomes necessary, although the horsed vehicle may suffice for short distances.

If parties can be made up to fill the railway tourist cars, and if the visitor is content to live in rather cramped conditions, there is much to be said for this method. The charge is made up of a daily hire charge and a haulage charge per mile, whether loaded or empty, if the car is vacated anywhere but at its stabling station, and not then occupied by another party. The charge calculation differs on the Burma railways, where there is no change of gauge, a factor which may add to expense in India. Arrangements must be made for catering while the car is detached from a train. This can be undertaken by a firm, but the experienced can engage an Indian cook and save expense. There is no charge for fares of servants and no excess charge on luggage, unless the weight exceeds a generous allowance. Hotel charges are avoided, and these, with gratuities, are rather high, while the cost of conveying the tourist, his servant and luggage from the station to the hotel and back adds to the outlay. At wayside stations the travellers' bungalow may be

full, there may be no messman, and consequently cooking utensils and stores must be taken, and add to excess luggage charges.

A tour by motor car involves the surrender of a portion of the accommodation to servants, luggage, and pots and pans. A caravan trailer may solve this difficulty, but may add another at the crossings by ferry of unbridged rivers. The R.A.C. or local motoring associations should be consulted, and will plan tours.

On the whole the tourist will be best advised to travel by train from one centre to another, to stay at a hotel where charges are reasonable, and to make excursions from the centre. It is not possible to plan tours in this chapter, because India may be entered at several ports, sea or air, although Burma is almost certain to be entered at Rangoon. The particular interest of the visitor cannot be foreseen. Convenient centres will be stated, and those objects of interest which can be visited by motor car or bus. The Indian Railways Bureau (57, Haymarket, London, S.W. 1) and the Mysore Railways (Grand Buildings, Trafalgar Square, W.C. 2) will take infinite pains to work out a tour.

It may be assumed that the visitor lands in Bombay, but he will be well advised to leave almost at once for the highlands to the east and south-east, and to return in February when the season is pleasant. The bustle of a great commercial city does not indicate that there are, close by, caves of great antiquity in the basalt formation. Those at Elephanta can be reached by launch, but a circular road gives access to Brahman caves at Jogesvari and Montpezir, and to Buddhist caves at Kanheri, all of which are more than 1,100 years old. Lonavla (eighty miles from Bombay on the way to Poona) is a centre for the Buddhist caves at Karli, Bhaja and Bedsa, 2,100 years old, Karli being especially remarkable.

Poona, the Maratha capital, 119 miles from Bombay, is not of great antiquity. It lies on the fringe of an area to the south,

traversed by railway and by the Bombay-Bangalore road, with many hill forts. Excursions from Poona can be made to Sinhgarh and to Purandhar, where a treaty was signed by an emissary of Warren Hastings in 1776.

At Sholapur, 164 miles by rail south-east from Poona, a metre-gauge branch runs south to Bijapur, capital from 1490 of another Muslim kingdom, until 1686, when it fell to the Emperor Aurangzeb. Most of the important buildings here were erected after the defeat, by two of the five Deccan kingdoms, of the great Hindu Raj of Vijayanagar at the battle of Talikota in 1565. The Gol Gumbaz (round dome) has a diameter greater than that of St. Paul's Cathedral, London, and not far short of that of St. Peter's, Rome. Like many domes, it is a 'whispering gallery.' It is only one of some twenty great buildings. The fort wall is six miles in circumference, with an inner citadel, but the city once had a circuit of thirty miles. There are some guns of remarkable size, and one is dated A.D. 1551, five years before Akbar became Mughal Emperor. He did not start to build Fatehpur-Sikri before 1570, and the walled city of Shahjahan at Delhi could not have had so large a population.

The next place of interest is Vijayanagar, the bulwark of the Hindus of southern India against Muslim conquest. On the way, and 73 miles south of Bijapur, is Badami (Vātāpi), once the capital of the Chalukyas, whose name is applied to a style of architecture. There are Brahman and Jain caves, and structural temples ten miles east at Pattadakal, and at Aihole, eight miles north-east of Pattadakal. One of the temples at Pattadakal is supposed to have inspired the design of the rock-hewn Kailāsa temple at Ellora (Elura).

Hospet lies fifty-three miles east of Gadag junction, where the Bijapur branch ends, and Vijayanagar is nine miles from Hospet, or thirty-four miles west of Bellary, a centre for many excursions of antiquarian interest. Vijayanagar flourished from 1336 to 1565,

when it was thoroughly sacked by the Muslims. The exact use of some of the ruined buildings is a matter for some speculation, but magnificent temples remain. The walls are described by an old Portuguese writer as being thirty-four miles in extent. It lies on the banks of the Tungabhadra river at the modern Hampi.

At Guntakal junction, 123 miles from Gadag, the metre gauge line runs south to Bangalore, which is the capital of the Mysore State, successor to the Vijayanagar kingdom, of which it formed part under a Viceroy. Bangalore can be reached also by railway from Hubli junction, west of Gadag, and is on a trunk road from Poona. The climate is remarkably equable. From this centre many excursions can be made. The Kolar goldfields are close by, and they are supplied with power from the hydro-electric station at Sivasamudram, on the Cauvery river. The falls can be reached via Malvalli, on the Mysore road, and twelve miles south-west of this place is Somnathpur, with an elaborately carved temple (1270) in the Hoysala-Ballala style of architecture. The road to Mysore also runs past the fortress of Seringapatam (seventy-seven miles), where the early Mysore Rajas had their capital. Haidar Ali, the usurper, reigned here, and his son, Tipu Sultan, fell in the second siege by the British army (1799). Mysore is eighty-seven miles from Bangalore and Ootacamund is 100 miles further, by road only. Coorg lies seventy-five miles to the west, also by road only.

The principal monuments of antiquarian and architectural interest lie west of Bangalore; and perhaps Hassan, on the Mysore-Arsikere branch railway, is the best centre. Halebid, ten miles north-east of Belur, was the capital of the Hoysala kings for 300 years, until the city was overwhelmed, first by Malik Kafur, general of Ala-ud-din, in 1310 and again in 1326. The Vijayanagar kingdom succeeded. The temples here are star-shaped, with elaborately carved friezes. Belur lies twenty-one miles north-west

of Hassan, and has a temple 800 years old in the same style. Sravanabelgula lies twenty-seven miles east of Hassan. Traditionally, Chandragupta the Mauryan retired here after his abdication in 297 B.C., and was visited by his grandson Asoka. It was a Jain centre, remarkable for a colossal statue and clusters of Jain temples.

From Madras the ancient temples of Conjeeveram (Kānchī) are easily visited by direct trains via Chingleput, thirty-nine miles to the south. The Seven Pagodas at Mamallapuram are nineteen miles east of Chingleput, but the Buckingham Canal must be crossed by ferry. From Tindivanam, seventy-six miles by rail and eighty-one miles by road, south of Madras, the battlefield of Wandiwash and the fort of Gingee (eighteen miles west) are accessible by road. There is a road-causeway over the Palar River, fifty-four miles from Madras, so that the weather must be watched during the north-east monsoon in the winter, when cyclones may develop.

Southern India contains many great temples in the Dravidian style of architecture, but they lie at considerable distances apart, along the South Indian Railway. From Trichinopoly as a centre, with Srirangam close at hand, Madura is ninety-five miles to the south, by road or rail, Tanjore is thirty-one miles to the east, by rail, and Kumbakonam is twenty-four miles north-east of Tanjore, also by rail. Rameswaram is far to the south and is best visited on the way to Ceylon, for it lies near the railway ferry.

The great State of H.E.H. the Nizam of Hyderabad covers an area in which the Andhras, the Chalukyas and the Rāshtrakūtas held sway for more than 1,500 years before the Muslim conquest of Muhammad Tughlaq and the rise of the Bahmani kingdom in the Deccan. In this area, indeed, traces have been found of prehistoric people, who lived more than 3,000 years B.C., at Maski, via Lingsugur, fifty-six miles by road, west of Raichur, on the northwest line from Madras, and then seventeen miles south. Very

recent excavations have disclosed their remains at Paithan in the north-west of the State. H.E.H. the Nizam has succeeded to much of the territory owned by the five Muslim kingdoms of the Deccan, afterwards absorbed by Aurangzeb.

From his capital at Hyderabad, an excursion by road can be made south-west to Malkhed (Mānyakheta), an old Rāshtrakūta capital. At Bidar, eighty-two miles west, just north of the Bombay road, the Brahmani dynasty established a second capital in 1428, moving from Gulbarga, which is on the railway south-west of Poona. The Barid Shahi dynasty succeeded in 1492 at Bidar. Kalyani, a capital of the Second Chalukyan dynasty, is 130 miles west by road from Hyderabad. Golconda is only five miles west of the capital, the fort of Bhongir lies twenty-eight miles to the east, while prehistoric cairns are at Raigir. Continuing, the road runs to Kazipet junction for a railway running north, and four miles away is the temple of Hanamkonda (1163) in the Chalukyan style. Ten miles further on is Warangal, capital of a Hindu kingdom reduced by Muhammad Tughlaq in 1323, and fugitives from which founded the kingdom of Vijayanagar, while nearly forty miles further east is the Ramappa Lake with remarkable temples.

The railway from Kazipet running north passes Sirpur, a Gond capital, and Manikgarh, a fortress of the same people, while just beyond the Painganga River, the boundary of the State, are Chanda and Balharshah, also built by the Gonds.

In the north-west portion of the State, Aurangabad is another centre, with a hotel built by the State. Paithan lies thirty-three miles south. As already mentioned, prehistoric remains have been found, but it was also the capital of the Andhras moving up the Godavery valley from the east coast about 200 B.C., and there are later cities in layers. On the road to the Ellora (Elura) caves and Kailāsa temple (eighteen miles) is Daulatabad, formerly the Hindu

Deogiri, and Rauza, the burial-place of Aurangzeb. To the Ajanta caves, with wonderful frescoes of great age, the distance is eighty-five miles. There is good accommodation here, and a further thirty-seven miles by road will bring the tourist to Jalgaon on the Bombay-Calcutta railway line. Nasik, on the Bombay-Agra road, lies 144 miles nearer Bombay by rail or road. Here there are Buddhist caves, and it is possible to travel by road to Bulsar on the B.B. and C.I. Railway, thereby cutting off a journey round two sides of a triangle. The Tapti Valley Railway from Jalgaon to Surat does not touch Nasik.

Ahmadabad, on the combined broad and metre gauge to Delhi, is another example of a capital of an independent Muslim kingdom, that of the kings of Gujarat. It was founded in 1411 and taken by Akbar in 1573. Junagadh in Kathiawar is an ancient city, at the foot of the mountain of Girnar, with many Jain temples. In Kathiawar also are Valabhipur (Vala), Palitana, for the Satrunjaya mountain, also a Jain centre, and Somnath, destroyed four times by the Muslims, from Mahmud of Ghazni to Aurangzeb. Veraval, close by, is a port with regular sea communication with Bombay, but Rajkot may be a convenient centre.

On the metre-gauge line, 115 miles north of Ahmadabad, is Abu Road, seventeen miles by road from Mount Abu, and marble Jain temples, typical of that style of architecture. At Marwar junction a line runs to Jodhpur, a city nearly 500 years old, with the older capital of Mandor, five miles to the north. Ajmer, 305 miles from Ahmadabad, is the strategic key of Rajputana, invariably seized by Muslim conquerors. The Arhai-din-ka-Jhompra is a mosque formed out of temple material in the same manner as may be seen at the Qutb near Delhi.

South of Ajmer, 116 miles on the Malwa branch, is Chitorgarh, three times sacked, each time after a last desperate sortie of the

Rajput garrison, their women and children having given themselves to the flames. Nagari lies eight miles to the north, and sixty-nine miles to the west is Udaipur, the modern capital of the 'Sun of the Hindus,' in a lake district. If Ajmer is omitted, a branch line from Marwar junction gives shorter access to Udaipur.

On the way south to Mhow, 204 miles by rail from Chitorgarh, there are objects of interest near Nimach and Mandasor. From Mhow, on the Agra-Bombay road, several excursions can be made. A road runs west to Dhar, thirty-three miles, and then twenty miles south to Mandu, a city once thirty-seven miles in circumference, and the capital of an Afghan dynasty ruling in Malwa. It is on a spur of the Vindhya range, overlooking the Narbada valley and the Bombay-Agra road, from which a road leads off near Gujri. Dhar is connected also by road, fifty-six miles, with Ratlam on the north, and with Ahmadabad to the west. From Dhar also a road runs forty-four miles to the Buddhist caves of Bagh, with paintings of which the India Society has issued a volume, *The Bagh Caves in Gwalior State*, 1927. North of Mhow (fifty-nine miles along the Agra road to Dewas and then by a road to the left or by rail via Fatehabad) is Ujjain, known to the Greeks and later called Avanti. It is believed to have been the seat of Asoka, when he was viceroy of Malwa. A less easily planned excursion is made by descending into the Narbada valley by rail to Mortakka, and six miles east of this is Mandhata, with old temples.

Bhopal, the next centre, is reached by the Agra road, turning off right at 126 miles from Mhow, or by rail (114 miles) from Ujjain, which is twenty-four miles from Nagda on the shortest broad-gauge route from Bombay to Delhi. Bhopal is twenty-six miles from Sanchi, and Bhilsa is five miles further on, with roads radiating to many places of interest and antiquity, such as the Hindu caves of Udayagiri to the west.

At Bhopal (or Sanchi) the tourist is on a line of railway to Jhansi, Gwalior and Agra. Jhansi is accessible also by road (sixty-one miles) from Sipri, on the Bombay-Agra road, but the principal interest of Jhansi is the strong fortress, taken by Sir Hugh Rose in 1858. From Jhansi, Harpalpur station is fifty-three miles to the east, and Khajuraho lies to the south-east, north of the Nowgong-Satna road. Satna is a station on the Bombay-Calcutta route via Jubbulpore. Khajuraho is an old capital of Bundelkhand, with magnificent temples and a museum. Gwalior and Chitorgarh were barriers to the invasion of Malwa from the north, and the fortress of Gwalior, with several Jain groups of statuary, provides much interest. It is 75 miles south of Agra, and can be visited from that centre, if the tourist has proceeded direct from Ajmer, via Jaipur, with its old capital of Amber.

The sights of Agra are their own commendation, and Akbar's short-lived capital of Fatehpur-Sikri lies only twenty-three miles to the west. The absence of large mausolea may be noticed and the buildings present unusual features in design. Muttra (thirty-five miles to the north-west) can be taken on the route to Delhi. It is an ancient Buddhist city, destroyed by Mahmud of Ghazni and Aurangzeb, and the objects of interest are now collected in the museum. Muttra is the centre of the district sacred to Krishna, with temples at Brindaban (six miles), Mahaban, across the Jumna river, and Gobardhan, on the road to Dig (twenty-three miles), a fortress of the Bharatpur State.

At Delhi (ninety-two miles north of Muttra) the architecture of nine centuries, Rajput, Muslim, and British in the New Capital, can be studied almost side by side. Here the solid base of the Indian Peninsula terminates at the northern end of the 'Ridge,' and the Indo-Gangetic plain to the north leaves no trace of battles fought at Panipat and Karnal for the mastery of India, or of the epic

battles, recorded in the Mahābhārata, on the fields of Kurukshetra round Thanesar.

At Lahore there is a Mughal palace and other buildings, including the tombs of Jahangir and his Empress. It was the Sikh capital, and Amritsar is thirty-three miles distant, with a frequent train service. The Golden Temple was destroyed by Ahmad Shah Durrani in 1761, but was rebuilt soon afterwards. A visit to Harappa, a prehistoric city, involves a train journey of 104 miles to Montgomery, and a road journey of fifteen miles, but the remains excavated are of the greatest interest. Mohenjo-Daro, a similar city, lies near the route to Karachi by the right bank of the Indus beyond Sukkur.

North of Lahore the tourist is in Græco-Buddhist territory, but the objects require a good deal of travelling, to attain solid ground north of the Jhelum River. From Rawalpindi the stupa of Manikyala lies sixteen miles to the south, and the three cities at Taxila are about twenty-one miles west along the Grand Trunk Road. Rawalpindi is the most suitable place from which to enter Kashmir, although, except during the winter, there is another motor route via Jammu-Tawi.

If political considerations permit, excursions can be made from Nowshera to Hoti Mardan (fifteen miles), Shahbazgarhi (seven miles north-east of Hoti), Takht-i-Bahi and Shahr-i-Bahlol, but many of the objects have been removed to the Peshawar Museum. The fort of Aornos, taken by Alexander, is out of reach in tribal territory. Peshawar is the old capital of Gandhāra, and Shahji-ki-Dheri is just east of the city, while in the Khyber Pass, traversed by rail and road, there is a stupa and the 'Kafir Kot,' just above Landi Khana, of which little is known.

Lucknow is attainable via Saharanpur, and is interesting on account of the events of the Indian Mutiny, like Cawnpore, which

is forty-five miles away. East and north-east of Lucknow is the country associated with the Buddha story, but here again a good deal of difficult travelling is required.

Allahabad is a city of great antiquity. While there is not much in the place itself, it is a centre for several excursions. Kausāmbī (the modern Kosam), an ancient capital, lies thirty-eight miles up the Jumna, but is not easily reached. Pabhosa is two miles to the west of Kosam. Bhita is only eleven miles south-west of Allahabad, and the remains show that it was occupied from before 300 B.C. to after 400 A.D. Garhwa also (thirty-one miles south-west) is ancient, and Jhusi across the Ganges on the Benares road is another ancient capital. Jaunpur, fifty-seven miles north-east by rail or road, was the capital of an independent Muslim dynasty (1397-1559), and contains many buildings of architectural interest, in some cases converted from Hindu temples, as at Delhi and Ajmer. Jaunpur is thirty-seven miles from Benares.

Benares is itself an ancient city, but Sarnath, four miles to the north, was the 'Deer Park' in the story of Buddha, and abounds with stupas from which remains have been collected in a museum. It is fortunate that the Ganges and its tributaries have not invaded the site. Lower down the Ganges, at Patna, the Son river has formed a new junction, nine miles upstream, and Pātaliputra lies buried under a new city, so that the description of Megasthenes, the Greek Ambassador, about 300 B.C., cannot be verified. It is now the capital of the Province of Bihar.

Bakhtiyarpur, on the old main line of railway, twenty-eight miles from Patna, is a junction for a narrow-gauge line to Nālandā (twenty-six miles) and Rajgir Kund (thirty-three miles), close to the Nagarjuni range of hills, full of Buddhist remains. From Patna a railway runs to Gaya, ninety-six miles, or Gaya can be reached by road from Rajgir Kund. The Barabar Caves are sixteen miles to

the north, and Bodh Gaya is seven miles to the south, with a very ancient temple, restored in 1884, after some earlier and uninstructed attempts.

Between Gaya and Calcutta the journey may be made by rail through the coal-mining area, or by the Grand Trunk Road. The only place of antiquarian interest is the mountain of Parasnath with Jain temples. Calcutta, of course, is a comparatively modern city, but in the Victoria Memorial and in the Indian Museum are many objects of interest, especially of the phase of history which produced Clive and Hastings.

The Province of Orissa lies south-east of Calcutta, and was conquered by Asoka. From Jajpur Road (210 miles by rail from Calcutta), a road leads eighteen miles east to Jajpur, capital of Orissa from 500 to 950 A.D. Cuttack is forty-four miles further by rail, and is washed on both sides by the Mahanadi and Khatjuri rivers. North of the Mahanadi is Jagatpur, junction for the Talcher branch, and from Jagatpur the Nalatagiri hills can be visited. There are Buddhist caves and images about 1,200 years old. Cuttack is almost inaccessible by road from the north because the railway bridges have no roadway. Temporary causeways in the dry season over the Khatjuri and Kuakha rivers give access to a most interesting area on the south.

On the road to Puri at fourteen miles is Balianta, where a road turns west to Bhuvanesvar, but Khandagiri has a better resthouse. Khandagiri, Udayagiri, and Bhuvanesvar are all interesting, and the Dhauli Edict of Asoka is five miles to the south-west of Bhuvanesvar, close to the Orissa Trunk Road. Returning to the Puri Road, at twenty-five miles from Cuttack is Pipli, and from here a fair road runs twenty-eight miles to the 'Black Pagoda' of Konarak, which, with the 'White Pagoda' of Jagannath, was one of the landmarks in the days of sail. Puri is twenty-five miles from Pipli, and con-

tains the temple of Jagannath. Alternatively, the railway can be taken to Khurda Road, and a car can meet the tourist, or the Orissa Trunk Road be taken to Chandka (eleven miles), from which place it is nine miles to Sardepur ferry on the Puri Road.

On the long journey to Madras there is little to see, and the sea trip to Rangoon is better made by returning to Calcutta. In Burma the development of the Buddhist pagoda from the small *hti* to the tall umbrella, and colossal Buddha images, are features of antiquarian interest. The Shwe Dagon Pagoda at Rangoon is an example, which it will be sufficient to observe from a distance rather than to ascend to a crowded platform after removing one's shoes, and near the Royal Lakes there is an enormous reclining Buddha. Both features can be seen at Pegu, but most people will prefer to go through by rail to Mandalay, accessible also by road. Moulmein has pagodas, and caves of interest near by.

At Mandalay there are many pagodas, and some relics of Buddha, discovered at Peshawar in 1909, are in the treasure house of the Arakan pagoda. Excursions can be made to the old capitals of Amarapura and Ava near the Irawadi River. Nine miles up the river is Mingun, with an enormous pagoda and a very large bell, weighing about eighty-seven tons.

From Mandalay, 120 miles down the river by steamer, is Nyaungu, and about five miles from the bank is the Pagan Circuit House. Pagan extends over about 100 square miles, and was founded about 1,800 years ago. It fell to a Chinese army of Kublai Khan in 1287. Near Prome, where the steamer may be left for the railway, is an ancient city of about the same extent as Pagan, some 1,200 years old. From Rangoon the steamer can be taken to Calcutta, Madras, or to Europe via Colombo.

GORDON HEARN.

GLOSSARY OF SOME INDIAN TECHNICAL TERMS

Note.—Throughout the volume the use of Indian vernacular terms has been avoided as much as possible, the English equivalents being given.

S = Sanskrit origin. A = Arabic origin. I = Iranian origin.

S *bā'olī*: large masonry well with steps.
S *bhīṭā*: ruins; mound.
S *chaitya*: a sacred object such as a tree, stupa, shrine, etc.
S *chhattrī*: (lit. covering, umbrella) a domed monument; a small ornamental pavilion.
I *dargāh*: a tomb dedicated to a Muhammadan saint; a shrine.
I *darwāza*: gateway; door.
S *ghāṭ*: flight of steps leading to water; bathing-place; embankment; hill pass.
S *gopuram*: pyramidal gateway of South Indian temple.
I *gumbaz. gumbad*: dome; vault.
A *ḥammām*: a bathhouse; 'Turkish' bath.
hti: finial on top of Burmese temple or pagoda.
A *'īdgāh*: open space used by Muslims for their Id prayers.
S *lāṭ*: monumental pillar.
A *maḥal*: mansion; hall; palace.
S *mandapam*: porch or pavilion of temple.
S *mandira*: Hindu temple.
A *masjid*: mosque (lit. place of prostration); *jāmi masjid*: principal mosque.
A *miḥrāb*: place (of honour) where the priest prays in a mosque; niche in the western wall in the direction of Mecca.
A *mīnār*: tower, pillar, minaret.
S *prākāra*: enclosure wall or corridor surrounding a temple.
A *qil'a*: fort.
A *rauẓa*: (lit. garden) mausoleum.
S *saṅghārāma*: place of retreat or monastery.
S *śikhara*: spire of a Hindu temple.
S *stūpa*: (lit. heap or pile) Buddhist monument, usually of brick or stone, containing sacred relics; memorial.
S *tīrthankara*: a Jain saint.
S *vihāra*: a monastery or shrine.
S *vimāna*: (lit. measuring out) a temple; a palace.

TRANSLATION OF THE FOREWORD

No one who turns over the pages of this book can fail to be impressed by the wealth and accuracy of the information it contains. Be the reader a specialized student or a mere amateur, a philologist or a historian, an archæologist or an ordinary tourist, the material is so clearly arranged and explained that he will find with the greatest ease any information which he requires, on any point of theory or practice of bibliography or topography, concerning the antiquities of India. At the same time he will survey, as if a film were unreeled before his eyes, the varied aspects of the ancient civilizations of the huge peninsula; for, even in such a brief account, the past cannot emerge from its pall of rubble and ruins without conjuring forth the ghost of ancient India. Monuments in the Indian States as well as in British India, or even in Central Asia, whether belonging to the last few centuries or to the very dawn of history, whether Hindu or Muslim, Buddhist or Jain, historical sites and places of pilgrimage, shrines and palaces, images and inscriptions, are all reviewed in their proper place, without any omission or lack of clearness.

It would hardly have seemed feasible to condense in 350 pages so many facts both important and minute and to introduce them to the reader so attractively. The *tour de force* is explained when we read the names of the Editor and his twenty-two contributors. There is nothing like getting the man who did the work to tell you himself how it was done. Here we have the past and present members of the Archæological Survey introducing us to their monuments and excavations, their collections and their written works. Thus this attractive volume should become—and for a long time remain, until, indeed, a new and up-to-date edition is deemed necessary—the indispensable *vade-mecum* of every Indianist and every scholarly Indian, as well as of occasional visitors to India, if they have any hankering after history and any feeling for art. Very soon, no doubt, no one will imagine how we could possibly have done without it, and the felicitous enterprise of the India Society will find its reward in the ever-increasing patronage of a large public.

Another point must certainly impress the reader: he will be filled with reverence and admiration for the vast amount of gallant and disinterested effort spent in archæological exploration by the last three generations—a stupendous enterprise, considering the magnitude of the Indian Empire. Climate or distance, difficulties of access, lack of training in the available labour, local feeling often hostile, prejudices inspired by caste and religion—none of the many obstacles raised by nature or mankind could daunt the first European pioneers, nor their successors, nor yet the Indian scholars who soon became their associates. Their persevering work has been rewarded not only by tangible results but also by a marked popularity. Among many boons conferred by Britain on her great Indian Empire, none perhaps has been more valuable than that of having made Indians conscious of their great artistic heritage and having taught them its worth; and it may be said that nowadays no part of their inheritance is more highly esteemed by them. People get so easily accustomed to the enjoyment of public justice and public safety, transport facilities and other amenities of life, that they no longer appraise these primordial blessings at their true worth until they are in danger of losing them; a danger which the *Pax Britannica* has so far averted from the Indian masses. But every new discovery, by adding to the national inheritance and by tickling pleasantly the national pride, revives an interest which, far from decreasing, grows wider and wider. For such is the way of mankind: men as well as children are thrilled not by their daily bread but by an occasional titbit.

Need we add that the time is ripe for submitting to the public a review of the splendid results already achieved? The history of Indian archæology can now be divided into two periods, quite distinct, though of the same duration: the one before, the other after Lord Curzon's Viceroyalty and the re-establishment of the Archæological Survey (1902). Prior to this date, there was, as everywhere else, a "heroic period," certainly fertile in important discoveries, yet marred by spasmodic extemporizations, unfinished excavations, clumsy restorations, and incomplete publications. Afterwards came at last the period of a well-organized service, of projects carefully prepared and brought to completion, of wisely conducted preservation work, of excavations steadily resumed year after year, of Annual Reports building up stately arrays on the shelves of libraries, whereby each new discovery became the common possession of students throughout the world. It was also, alas! the

period of accumulated files and red-tape, of an overwhelming administrative routine. All this, needless to say, did not come about spontaneously; in the East, even less perhaps than anywhere in the world, things do not materialize without human agency, and the value of the work depends on the value of the workman. Luckily Lord Curzon had wisely made an application in the proper quarter, and the British Museum authorities recommended for his choice a young archæologist who had just made a brilliant *début* in Greece and Crete. By a curious coincidence which may be worth noting, there was a predestination in his name, for John Marshall had been the first Englishman to take an interest in Indian antiquities as far back as 1668-1672. More than one of our Indian friends must feel convinced that the same man was born again under the more favourable circumstances of our times to resume his task on a large scale. Be that as it may, it is recognized that just as the early period of the Archæological Survey of India is identified with General Alexander Cunningham's career, so is the later period entirely impersonated by Sir John Marshall, second of the name.

What the last thirty-six years of successful research have given to India and to science will be found summarized in the following pages. Experience has shown the method followed to be a wise one: exploration and preservation, instead of working at cross purposes like quarrelsome sisters, will henceforth pull together hand-in-hand. They have already transformed every excavated site and every monument under their care into a fairy resting-place for travellers and a field of memories for historians. To quote only two instances out of a score, it is the same wizard's wand that has left its mark round the Taj Mahal at Agra and on the holy Buddhist hill of Sanchi. The aim was no longer to furnish with reliefs or statues the provincial museums, nor even the local archæological repositories—a highly praiseworthy departure as far as they go. It was now desired to revive the culture of Indians in past ages, with their cities, their streets, their furniture, their clay or metal implements, their weapons, their jewels, their seals and their coins. With this end in view, the three successive cities of Taxila have been restored to us: that of Alexander, that of the Parthians and that of the Kushānas. We may well say "restored," for the ruins themselves are not destroyed; instead of crumbling down, as they formerly would under the pick and shovel of the coolies, or of being left to the depredations of the villagers, they have been brought to light with the purpose of starting a new

lease of life. The book of excavations remains open at the last entry, so that anyone may read for himself the secrets of the past.

Yet all this work had failed to take us back beyond the fourth century B.C., and Indianists felt rather "out of it" as compared with Assyriologists and Egyptologists, who talked so familiarly about three or four more millennia than they could. The sensational finds in the valley of the Indus have at last given us the right to an equal footing with the Mesopotamian and Nile Valley savants. These astounding discoveries thrilled the whole world, and made Sir John Marshall famous—of course not without the occasionally excessive simplification of the real facts. Let us hope the excavations at Mohenjo Daro and Harappa will not cast in the shade his other archæological achievements; yet he must accept his fate: to future generations he will always be the man who, archæologically speaking, left India three thousand years older than he had found her.

A new era is opening before the Archæological Survey, whose staff is now all-Indian. A master hand has fixed and written down the proper methods, sketched the outlines of future research, and set a great example. Indian archæologists will progress on the path which has been triumphantly opened for them. Their elders fully realize the vastness of the task they have handed over. No one can fail to approve the policy of the Government of India, who have decided to accept henceforth for archæological research, on the same terms as in Egypt or Syria, the co-operation of foreign universities and learned institutions. For the work that remains to be done, indeed, many decades and many willing students can hardly be enough. It may perhaps prove advisable, now that the ground is roughly cleared in India proper, to widen systematically the field of Indian archæology. For the highest service rendered to us by Indology after a century and a half of existence is that it showed us the true place of India in the ancient world, and the part she played in the general history of civilization.

It is now an established fact, that however secluded she may have been within the boundaries of her seas and mountain ranges, India was ever open to influences from the West; and, on the other hand, has ever extended her own influence over Eastern Asia. As by reason of her climate she took a high toll of men and man-power, it was from the West she received and absorbed the influx of Mongols, Arabians, Scythians, Parthians, Greeks, Persians, Vedic and pre-Vedic tribes—to mention only such invaders of old

as have left written proof or material evidence of their passage; it would even seem that pressure from the West caused her in turn to overflow into Indo-China and Indonesia. Thus it becomes increasingly clear that her Archæological Survey must surely benefit by working *en liaison* with the Surveys of Burma and Ceylon, of French Indo-China and the Dutch East Indies, and also with those of Afghanistan, Iran and Iraq, pending the time when the east coast of Africa and Madagascar will join in the game; for we know at present that the "Great Island" was an Indo-Malayan colony, and one cannot help wondering whether the unfathomed mysteries of the ruins in Rhodesia may not yield their secret to an Indianist. The Pacific Ocean already has its periodical meetings of scientific men, to the great satisfaction of all the nations concerned; the Indian Ocean deserves to have its own similar gatherings; and India, the keystone of its culture, is the obvious centre for their assizes. In such a wide intellectual co-operation do we see the brightest outlook for the future of Indology.

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